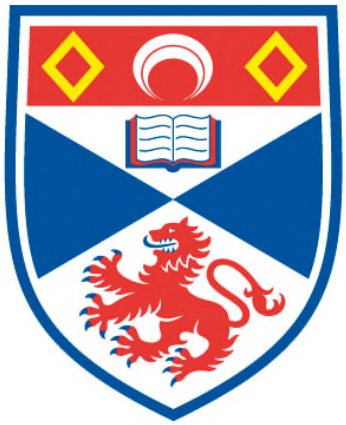
'VISIONS OF WILDNESS':
THE PLACE OF (RE)WILDING IN SCOTLAND'S UPLANDS

Holly Angela Deary

A Thesis Submitted for the Degree of PhD
at the
University of St Andrews



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at the University of St Andrews

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Abstract

Notions of 'wildness' are increasingly relevant to upland management discussions in the Scottish Highlands as several conservation-focused estates embrace a 'wildland management ethos'. However, while a range of wildland conservation initiatives have embarked upon pathways towards 'rewilding', this research demonstrates that, although members of this creative conservation movement are widely perceived to share a common vision, they prioritise markedly different wildland qualities. Through a series of triangulated phases, this research explores this 'spectrum of wildness' and examines the conceptual coherence of wildland restoration discourses. Twenty semi-structured scoping interviews with key stakeholders associated with Scotland's wildest places provide the foundations for an adapted Delphi model, incorporating a Q-methodology study, which utilises insights from seventeen large upland land-holdings to interrogate the disparate discourses associated with Scotland's emergent wildland movement. A taxonomy of management approaches is presented based upon (i) different conceptions of 'wildness', (ii) differing degrees of concern for ecological and cultural integrity, (iii) conflicting beliefs about the degree of management intervention appropriate and (iv) fundamentally divergent underlying environmental ideologies. A further twenty-three semi-structured interviews exploring wilderness restoration frameworks in the USA, New Zealand and parts of Europe provide an international perspective on Scotland's distinctive approach to wildland management and demonstrate the challenges of multi-dimensional wilderness frameworks which grow out of conflicting mandates; most notably, a critical faultline exists between restoring 'wildness' (focussed on processes) and naturalness (focussed on endpoints). Given that practical tensions can arise from these different ideological perspectives, understanding and accommodating the social and cultural dimensions which shape multiple (re)wilding discourses is considered critical. As such, place-specific and endogenous social representations are called for, in which wild land is both a physical place and a cultural ideal, and in which (re)wilding comprises a heterogenous mix of different wilds. This research also critically reflects upon how cultural landscapes with wild qualities present opportunities for rethinking the historical and cultural dimensions of established wilderness values. By exploring the framing of 'wild' in Scotland's wildland initiatives, a postmodern wildlands narrative which negotiates the conceptual challenges of (re)wilding in a storied, cultural landscape is presented.

Acknowledgments

My warmest thanks go to both supervisors, Dr Charles Warren at the University of St Andrews, and Dr Rob McMorran at Scotland's Rural College, both of whom have not only provided a tremendous amount of support and guidance, but have been lovely to get to know and great travelling companions. Charles' influence in particular far precedes the start of my PhD – I am grateful that since my undergraduate visiting day in St Andrews he has influenced some significant life choices I have made. I also thank the Carnegie Trust for the Universities of Scotland for funding this PhD and Scottish Natural Heritage for providing office space (and cake) for part of it.

I am indebted to the land managers and practitioners who not only gave up their time to participate in this research, but did so with full spirit and enthusiasm. I could not have asked for a friendlier, more lively bunch of characters, some of whom I have shared some hugely entertaining times with. Thank you also to friends and colleagues in St Andrews, but particularly Vikki, with whom I have shared copious amounts of humous and enjoyed many 'handstand breaks'.

Since a young age I have had an overwhelming preoccupation with the Highlands. They bewitched me as a child as we drove through the straths and glens in our little Renault 5 stuffed to the gunnels with camping gear, three children, a dog and the Corries playing. This is definitely where my fascination with environmental issues in the uplands began. Therefore, despite not always 'getting' what I do, I am very grateful to my parents for always feeding me the allure of the Highlands as a child.

My final thanks go to Jules. You have been both a great support and great distraction in equal measure. Your caring never waivers – even though my PhD has put a temporary hold on our shared adventures. I am forever grateful (…..and I promise we can have a break from my 'writing-up soundtrack', Manran, for a while at least!).

Scotland's wild places. Photo © Neil McIntyre.

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Recreationalists on the Cairngorms plateau, Cairngorms National Park in Winter. Photo © Neil McIntyre

Clarifying Scot's lexicon

Uplands: multifunctional landscapes which have nature conservation value, but which also provide resources and livelihoods to local people. Primarily defined in accordance with the upper limits (i.e. elevation above sea level) of farming and the boundary of the Less Favoured Areas designation boundaries (see Glass *et al.*, 2013b).

Estates: large-scale rural-landholdings under the ownership of private individuals, non-government organisations and community trusts/organisations which form a distinct landownership pattern in Scotland.

Traditional sporting estate: an area of Scotland typically ranging in size from 1,000-10,000 hectares and under private ownership which is managed for field sports (MacMillan & Leitch, 2008). Dominant management ethos might be to produce trophy stags for commercial clients or friends and family (Clutton-Brock *et al.*, 2004). Very traditional codes of conduct and practices are often adhered to.

Factor: a person, or a firm, who manages a Scottish estate.

Ghillie: a person who attends someone on a hunting or fishing trip.

Bothy: a basic shelter, usually unlocked and free to anyone, which is used as a place of refuge, particularly in mountain environments (often referred to as 'wilderness huts' in other countries)

The upland environment of the Cairngorms National Park in Autumn. Photo © Neil McIntyre

Chapter 1

Introduction: a 'wilder Scotland'

1.1. Controversial rewilding: research context and rationale

"An angry and bitter row has erupted over plans by the Royal Society for the Protection of Birds (RSPB) to expand the remnants of Scotland's Caledonian pine forest in the Cairngorms by planting more than 70,000 trees" headlined a recent newspaper (Edwards, 2013). RSPB's response is that this forest is not a pristine wilderness, having been grazed, ploughed, planted and fenced for at least the past 200 years. While critics believe planting will damage the intrinsic naturalness of this naturally descended ancient woodland (Fig.1.1), others believe that practices like enrichment planting are essential to the strategic creation of more, quality, wildlife habitat and to the restoration of natural conditions.

Figure 1.1*: Ancient Caledonian pine in the Cairngorms National Park. Enhanced or degraded by 21st Century habitat restoration practices? Photo © Neil McIntyre.*

This polarising dispute is representative of debates currently being played out in many international contexts as conservationists increasingly aspire to enhance wildness and naturalness. Rather than clinging to remnant fragments of nature, conservation

discourses are reaching beyond their preservationist foothold to embrace ideas of creative restoration (Adams, 1996a). In particular, the concept of wilderness restoration, or 'rewilding', is in vogue in Western society at present (Arts, 2012). Rewilding aims to go one step further than celebrating isolated vestiges of wild nature; instead it aspires to recreate what has been lost by returning missing species, restoring ecosystem processes and renewing the broad qualities of wilderness (Warren, 2009a; Brown *et al.*, 2011). In a bid to recreate unbounded nature and thriving ecosystems, conservation lands across the globe are undergoing a process of de-domestication as human control is drawn back, and nature becomes its own designer once again (Lorimer & Dreissen, 2012). As this 'wilderness approach' to nature conservation gains pace, key concepts and phrases such as 'landscape-scale', 'natural processes' and 'self-willed nature' are common in conservation discourse (Adams *et al.*, 2004; Fisher, 2006; Reardon, 2014). With growing awareness of the potential for wilderness to deliver resilient, adaptive conservation landscapes for the future, "a range of new wildland conservation initiatives are emerging" (Martin *et al.*, 2008:34).

However, as a "contemporary and reinvigorated manifestation of the old concept of wilderness" (Arts, 2012:10), rewilding challenges long-established ideas, values and practices in conservation discourse. As the opening example suggests, restoring and protecting wildland raises difficult, and complex, questions over what is the value of 'wild' and 'natural', and what degree of intervention is appropriate? As conservation organisations grapple with terms like 'wild' and 'natural' - and what their implications are for management approaches, different conclusions over what future conservation landscapes should look like, and how that should be brought about, are reached. Rewilding forces conservationists to commit to a particular understanding of a 'natural' or 'wild' system and to make difficult choices about where the boundaries lie between 'desirable conditions' and 'letting go' (and accepting the consequence) (Rotherham, 2014). Rewilding is, therefore, a debate fraught with dilemmas over definitions and implementation as it connects with many broader debates in environmental philosophy. For example, what is the place of *Homo sapiens* within non-human nature? Is there any mileage in ideas of 'natural' and 'wild' in an era of rapid environmental change and pervasive human influence? As a human action, does restoration compromise existing wilderness value? Is it possible to restore the intrinsic value of wildland? How should the spatio-temporal baselines of rewilding be defined? But, while the ecological-functioning arguments for rewilding are plentiful and persuasive (e.g. Soulé & Terbough, 1999; Sandom *et al*., 2013a), the conceptual foundations of these discourses have received surprisingly little critical examination, as the deficit of literature on this emerging paradigm testifies.

This is particularly the case in Scotland where growing numbers of landscape-scale restoration proposals provide an evolving context within which to explore broader rewilding discourse and debate. On-going feasibility assessments for potential species reintroductions (e.g. the beaver (MacDonald *et al.*, 1995; 2000)), a number of natural

woodland regeneration initiatives (Hobbs, 2009) and increasing numbers of landowners committed to large-scale landscape restoration all demonstrate how Scotland is upping its investment in 'rewilding' (Carver, 2007; Taylor, 2011). Beyond the nature conservation realm, wildland quality as a landscape attribute is receiving sustained attention too as, for example, controversy over the suggested removal of some of Scotland's upland bothies to restore a 'sense of wildness' heats up (Hewitt, 2012). This broad wildland movement is not, therefore, a revolution of thinking alone; a range of private landowners and NGO landholdings are experimenting with new and creative ways of expanding and recovering 'wildland' (Taylor, 2011). But these practical steps towards rewilding are not uncontested. The lack of consensus or clarity over what this new environmental ethic means, how it should be delivered or indeed, whether its objectives are desirable, in Scotland (or further afield), has generated much debate between conservationists (Gamborg *et al.*, 2012). Furthermore, conservationists have been accused of 'green fundamentalism' as rewilding comes into conflict with farming and sport management (Smith, 2009), and seemingly finds little place for people in nature (Driver, 2014).

Historically, wilderness protection has been heavily criticised for side-lining human histories and cultural values (van der Heijden, 2005). A danger of using wilderness values as a guide in nature conservation and land management, therefore, is that it distorts ideas of what is possible and desirable in conservation by aiming for the ultimate landscape of authenticity (Dudley, 2011). By invoking notions of 'untouched' and 'unmanaged', 'rewilding' risks undermining the significance, and value, of cultural landscapes, and ignoring the fact that Scotland's uplands have a long history of human management. As an American concept, with its spiritual home in the vast core wildlands of places like Yellowstone National Park (Fraser, 2009), the relevance of rewilding to conservation settings closely allied with notions of sustainable conservation – such as Scotland's distinctive landscapes of wild character – requires some consideration (Brown *et al.*, 2011). The fact that Scotland "has increasingly forged its own path in thinking about and delivering conservation" (Adams, 2012:26) suggests that exploring what 'wildness' means in these hybrid landscapes could prove very insightful. Consequently, two central premises of this research are (i) that different wildland initiatives are guided by opposing philosophies, perspectives and values, and (ii) that understanding the nature of conflicting 'visions of wildness' is important to the development of wildland policy.

1.2. Research aims and approach

This thesis provides a critical social sciences perspective on the place of 'wildness' in Scotland's broader land-use debates. By providing an introduction to existing rewilding experiments, it aims to clarify the goals associated with a 'wildland ethos' and to

present a coherent picture of wildland management and restoration narratives in Scotland. Focusing on the human-environment dimensions, it critiques concepts and practices, and explores the ways in which contrasting perspectives are justified and negotiated. This research therefore asks critical questions about aspirations for a wilder Scotland, particularly in relation to the ways in which fundamental conservation values like 'wildness' and 'naturalness' are defined, and how they interact with one another. Critically, this research does not begin with any predefined framing of the concepts it seeks to clarify, being instead, concerned with how individuals at the frontiers of this movement conceive them. By focussing on the management realm, this thesis reviews, and reflects upon, applied, practitioner-shaped 'visions of wildness'. It thereby concentrates on management interventions, recognising the importance of understanding the land manager perspective given that what a 'wilder Scotland' might look like will be tempered by their outlook and mindset.

Overall thesis aims:

The overall aim of this research is to explore visions, concepts and practices associated with Scotland's emerging wildland movement. Within this broad remit there are a number of more specific aims which are broadly conceptual, normative and practical in nature. The theoretical framework for this research is thus as follows:

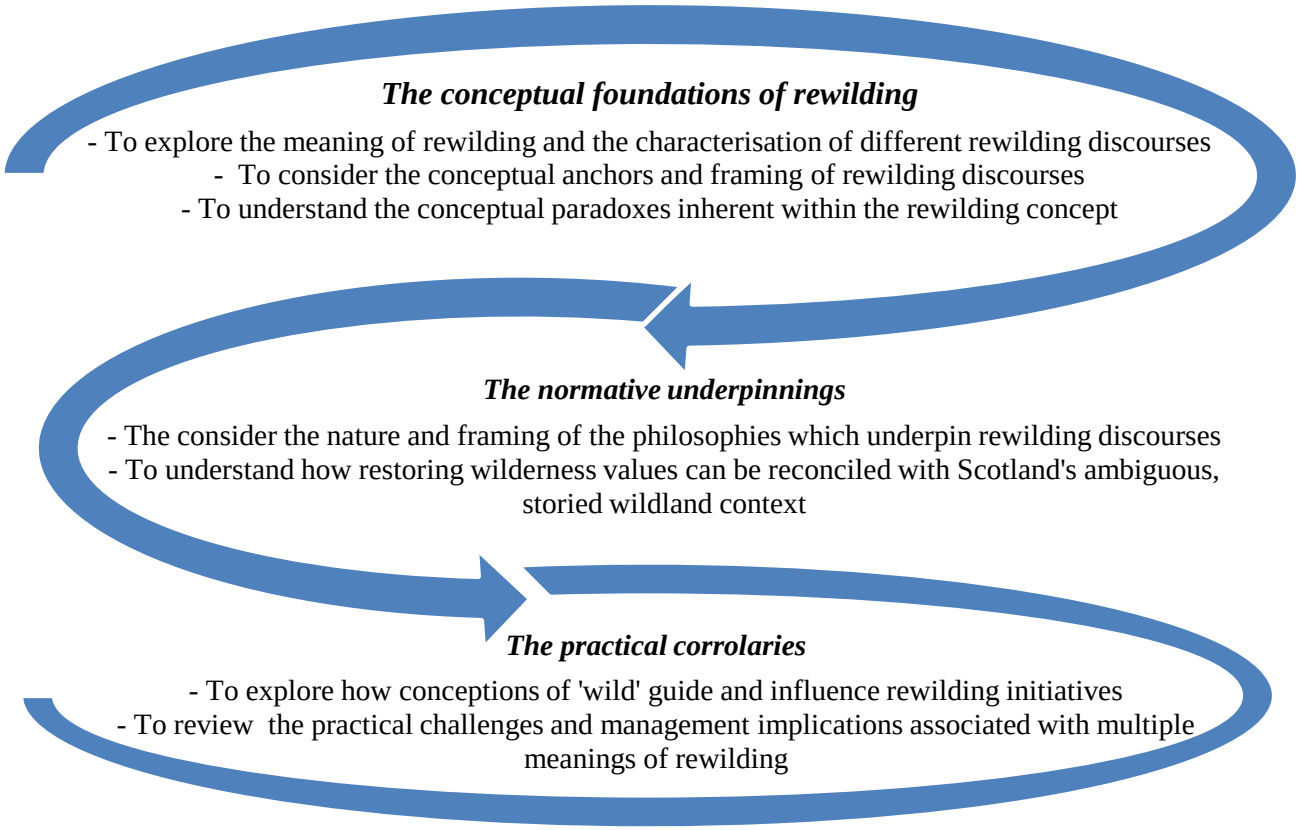


***Figure 1.2**: The theoretical framework and specific research objectives for this research.*

Situating Scotland's rewilding debate within the broad field of international wilderness restoration discourses is considered critical to achieving these objectives. To this end, this research aims to contribute to the development of a conceptually sound foundation for Scotland's rewilding initiatives to proceed, while also exploring the contribution that Scottish discourses could make to international rewilding concepts and practices.

In order to critically appraise the concepts and practices of rewilding, both in Scotland and in three overseas regions, a mixed-method approach is employed. It is iterative, interactive and transdisciplinary, sitting at the interface between environmental and social sciences. As rewilding debates are inherently geographical, concerned with concepts of place, space, nature and humanity-nature interactions (Havlick & Doyle, 2009), this research is firmly rooted in the discipline of geography. The methodology is fully explained in Chapter 4.

1.3. Research contribution and wider benefits

By focussing on improving understanding, clarifying terminology and establishing a taxonomy of wildland discourses, this thesis aims to (i) contribute to policy discussions, and (ii) foster greater understanding amongst the diverse stakeholders who share responsibility for stewarding Scotland's wild places. A principal advantage of the research approach is its capacity for linking academic insight with practical application. By working closely with many types of stakeholders it could benefit a wide range of sectors (conservationists, rural planners, NGOs, conservation departments, policy makers). Also, by acknowledging the invaluable contribution that practitioner insight can bring to policy, it may engender more constructive communication channels for collaborative management and research in the future. Furthermore, this research seeks to bridge the gulf between the biophysical, sociological and cultural dimensions of the wildland concept, thereby providing the beginnings of an integrated framework capable of recognising both the natural and cultural heritage values in wildland. Ultimately, at a time when Scotland's wildland is so much in the public eye (Scottish Parliamentary debate, 2013), it is imperative that the nature of contrasting rewilding trajectories is understood, particularly when one considers the practical tensions which can arise from different ideological perspectives on the relative importance of Scotland's natural and cultural heritage. Accordingly, this research is relevant to a wide range of individuals and organisations with environmental stewardship responsibilities in Scotland.

1.4. Thesis structure

This thesis comprises four main sections. Section 1 reviews the research context as Chapter 2 explores the conceptual parameters of the (re)wilding concept and Chapter 3 considers on the specificities of Scotland's wildland context. The second section (Chapter 4) critiques the specific research techniques employed in this research and describes the overall research methodology. Section 3 (Chapters 5, 6, 7 & 8) presents the results of iterative 'rewilding' discussions with practitioners in Scotland and overseas. The final section (Chapters 9 & 10) discusses the conceptual implications of this research, considering firstly, the lessons Scotland can learn from international rewilding discourse, and secondly the lessons Scotland can bring to the broader context of rewilding.

Chapter 2

Rewilding: an emerging paradigm

2.1. Introduction

This chapter establishes a theoretical context for this research. It aims to:

- *Chart the growing commitment to 'wilderness values' in nature and landscape conservation*
- *Review the emerging concept of rewilding internationally*
- *Review the broader debates that rewilding connects with in nature conservation and environmental philosophy discourse*

2.2. The roots of rewilding

Understanding the role of wilderness in nature and landscape conservation today, and in the future, necessitates an understanding of the evolving meanings of wilderness through recent history. A mere hundred years ago, conserving wilderness in perpetuity would have been considered an absurdity (Oelschlaeger, 1991; Hall, 2005). Early settlers to the New World sought meaning and identity through civilisation and development in contrast to the disordered chaos of wild nature (Nash, 1970, 2001). These savage, unconquered lands needed subjugating in the name of progress (Scott, 1959; Stankey, 1989; McDonagh, 1992). However, despite constituting a landscape of fear and enmity historically, wilderness has largely shed its negative connotations, acquiring positive connotations instead; "the wilder the better" nowadays (Warren, 2009a: 254).[1] With its increasing scarcity, a positive tradition of celebrating 'wild nature' grew (Turner, 1996). Wilderness became worth saving and a range of wilderness protection arguments developed (Table 2.1) (Arts, 2012).

[1] For a detailed account of the shifting attitudes towards wilderness through time see Glacken (1967), Oelschlaeger (1991), Cronon (1996), Callicott & Nelson (1998), Hall (2002) and Rodwell (2003).

Common arguments for wilderness protection throughout history	
The cathedral argument	Wilderness should be protected for aesthetic value and spiritual renewal
The laboratory argument	Wilderness should be protected as a vital subject matter for scientific enquiry
The silo argument	Wilderness should be protected to preserve a stockpile of genetic diversity
The gymnasium argument	Wilderness should be protected for athletic and recreational activities and value

***Table 2.1**: Frequently made arguments for the protection of wilderness (see Godfrey-Smith, 1979)*

Driven by transcendentalist thinking about the rejuvenating potential of wild spaces (Emerson, 1876, Thoreau, 1893) and Muir's preservationist thesis (1911; 1980), the roots of environmental consciousness focussed on the aesthetic and spiritual value of wilderness (Stankey, 1989; Guha, 2000). As wilderness became the "landscape choice for elite tourists" (Cronon, 1996:105), it was thus defined in strongly recreational – and largely anthropocentric – terms (Hall, 2002). However, in the wake of Aldo Leopold's (1949) *'land ethic'*, a new environmental philosophy emerged and the field of ecology developed. An ethos of environmental responsibility was born and a moral imperative for nature protection transpired (Kuzmiak, 1991; Oelschlaeger, 1991; Cronon, 1996; Pepper, 1996; Guha, 2000; Warren, 2004; van der Heijden, 2005). As the writings of Carson (1962), Ehrlich (1968) and Naess (1973) evoked a deep ecology, this natural science perspective gained weight, and concern for nature's intrinsic value began to overshadow its instrumental value (Cafaro, 2001a).[2] Therefore, while designated wilderness areas act as biodiversity reserves today, this is an afterthought to the recreational origins of wilderness preservation which were driven by monumentalistic curiosity for nature's spectacles (Muir, 1996; Foreman, 1998a; Callicott, 2000; Sheail, 2010). As the 'wilderness movement' evolved the intrinsic value of nature was sanctioned through the enactment of the National Parks system and ultimately the seminal US Wilderness Act (Nash, 1970; Runte, 1987; Oelschlaeger, 2002; Tweed, 2010b). 'Preservation' in terms of 'keep out, don't touch' quickly became the dominant narrative (Brockington, 2002; Miles, 2009), resulting in the defensive, 'nature under threat' conservation approaches which persist in many protected area networks today (Wilshusen *et al.*, 2002). As ecologists increasingly recognised that natural beauty is not necessarily a precursor to productivity and species richness, the concept of biological conservation developed (Soulé, 1985; Foreman, 1998a). By the late 1970s

[2] See Foreman (1998a) for a detailed account of how designated Wilderness areas were originally concerned with 'monumental scenery', but recognition of their natural value evolved through time.

conservationists had crafted complex classifications for biological character (Adams, 1996b; Soule & Noss, 1998). Conserving representative ecosystems of rare habitats or vulnerable species was paramount as conservation management became a rearguard response to degradation, intent on retaining the apparent balance of nature (Hilderbrand *et al.*, 2005). But, with island biogeography theory came insight into the limitations – not to mention expense[3] – of small, fragmented and poorly connected reserves. Traditional site-focused, and species-focused, conservation was found wanting, and ideas of ecosystem-based conservation evolved (Colston, 2003; Bishop & Phillips, 2004; Warren, 2009a).

This shift towards landscape-scale conservation was largely driven by the realisation that nature is, in fact, a set of processes, rather than a collection of objects (Norton, 1994; McNeely, 2006). While "we have tended to view nature as a Kodochrome still-life" (Botkin, 1990:6), a fundamental realignment of ecological faith in the 1980s exposed its non-linearity and the significance of disturbance patterns in the evolution of landscape change (Pickett *et al.*, 1992; Taylor, 2005). As ecological modelling revealed the complex dynamicism and multiple stable states in ecological systems, the dominant school of ecology shifted from equilibrium to non-equilibrium ecology (Botkin, 1990; Pickett *et al.*, 1992; Head, 2000; Wallington *et al.*, 2005). This resulted in a perceptual shift away from preserving static endpoints, towards considering change as a natural part of natural systems (Botkin, 2001).

This new ecology was therefore paralleled by a shift in conservation practice towards a more creative, experimental management paradigm (Adams, 1997; Young, 2000; Warren, 2009a). Traditional, reactionary discourses were abandoned in favour of proactive approaches (Sheail *et al.*, 1997). No longer content with 'gardening' in small reserves, conservationists argued for the positive rehabilitation of habitats (Adams, 2003; Warren 2009a). Shifting from the back foot to the front foot, conservation therefore moved beyond protecting and preserving the rare and threatened, towards restoring, creating and recreating 'desired conditions' (Adams, 1996b; Alexandra & Riddington, 2007; Drenthen *et al.*, 2009; Warren, 2009a). Not only did defensive conservation fail to deliver effective protection, it no longer accorded with broadly accepted ideas about the 'nature of nature'. Releasing natural processes at the landscape-scale and moving beyond a specific species focus to acknowledge species interactions are, therefore, characteristic ideas of this visionary shift away from protectionism (Kirby, 2004; Donlan *et al.*, 2006).

[3] Traditional conservation approaches necessitate the purchase, or lease, of large reserves which is a considerable financial burden to conservation NGOs (Adams, 2003).

The expanding scope and technical competence of creative conservation (both nature and landscape conservation) has been striking (Scott & Luscombe, 1995; Adams, 1996b). By the mid-1990s conservationists had a complex lexicon associated with habitat manipulation (Adams, 1996; 2004). With such wide-ranging efforts to restore missing ecological processes and functions, ecological restoration (defined by SERI [2004] as 'intentional action to assist in the recovery of a degraded, damaged or destroyed ecosystem') is a key component of late 20th and early 21st Century conservation (Foreman, 1998; Young, 2000). Initially, restoration actions involved the introduction of prescribed fire or the use of cattle as a wildlife management tool (e.g. Peterson & Reich, 2001), but as restorationists have become bolder, much attention has focused on the potential for reintroducing extirpated fauna to re-establish critical missing processes (e.g. Cop & Frkovic, 1998; Sandom *et al.*, 2013a). At present, there are a range of techniques, approaches and underlying philosophies associated with creative conservation, ranging from ideas of creating completely new habitats, attempting to recreate historical habitats or simply trying to improve degraded habitats (Adams, 1996a).

As calls to abandon specific, defined outcomes and targets in conservation continue today (Alexander, 2008), an increasingly important part of this creative movement "reflects a move towards natural wilderness" (Robertson & Minter, 1995:1). Wilderness has emotive appeal and a good track record of being good for nature conservation, its scale providing the ideal conservation landscape (Callicott & Nelson, 1998; Arts, 2012). Therefore, as issues of rapid environmental change present new challenges to traditional conservation discourse, conservationists are increasingly entertaining ideas of "abandoning land to ecological change, effectively 'creating wilderness'" (Colston, 2003:251). As recreating wilderness qualities through ecological restoration and minimising human influence (or completely removing it in instances) grows in ascendency, ideas of rewilding are entering centre stage (Fig.2.1) (Mackey *et al.*, 1998; Brown *et al.*, 2011; Carver, 2013). Perhaps nowhere is this more apparent than in the Resolutions associated with the 10th World Wilderness Congress of 2013 (see http://resolutions.wild10.org/).

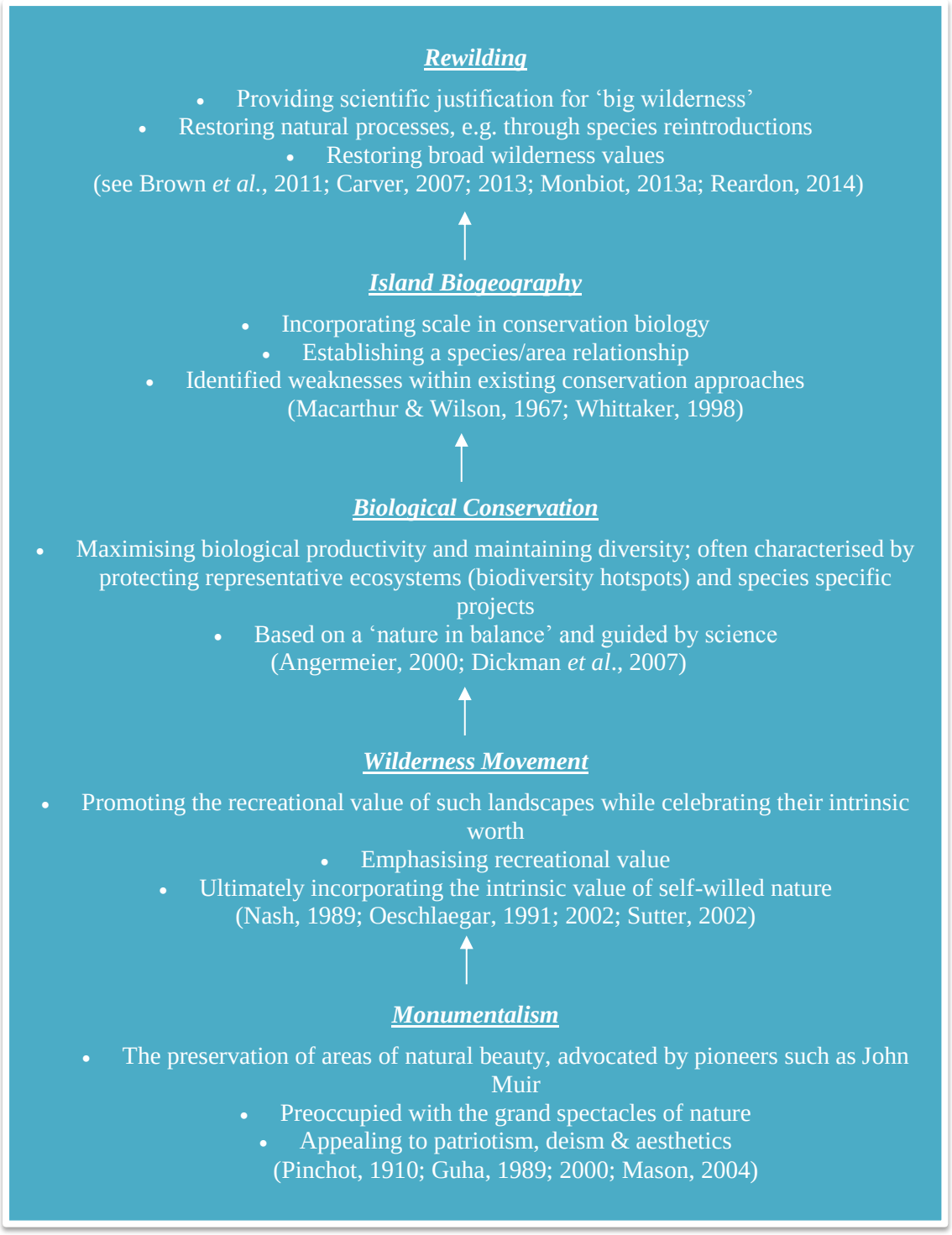


***Figure 2.1**: The shifting paradigms and historical movements leading to 'the rise of rewilding' (Soule & Noss, 1998; Klyza, 2001; Foreman, 2004; Northrup, 2012).*[4]

[4]Soule & Noss (1998) further explore the relationship between the more traditional biodiversity conservation paradigm and the rewilding paradigm and the fact that they are not entirely mutually exclusive.

2.3. What is rewilding?

'Rewilding' is, therefore, the latest manifestation of this broad shift towards 'creative conservation' (Taylor, 2011). At its most fundamental level, it is about protecting and restoring big wilderness and wilderness values (Fraser, 2009). The rewilding movement is, therefore, premised on the idea that human stressors on the environment can be minimised by maximising wilderness character (Locke, 2012).

From a wilderness perspective, undisturbed ecosystems have inherent value (Rolston, 2001). Rewilding therefore attempts to reverse the long history of human disturbance in ecosystems (e.g. habitat alteration and fragmentation through overgrazing, burning, unsympathetic forestry practice), thereby returning humanised landscapes to a more natural condition (Brown *et al.,* 2011; Carver, 2013). It seeks to restore the balance between humans and nature by undoing human action and restoring large tracts of land to their natural state (Monbiot, 2013a). With its roots clearly traceable to the American wilderness movement and Romanticism (Fig. 2.1), rewilding is strongly allied with 'wildness' and 'naturalness' (Cole, 2008). Accordingly, the loss of wild nature is the most commonly cited argument for rewilding as it seeks to restore the ecological wounds of the past to enhance naturalness and wildness into the future (Featherstone, 2004; Carver, 2007). It is therefore rooted in a view of wild places as "not only necessary for inspiration and a true wilderness experience [but also] necessary for the protection and restoration of ecological integrity and native species diversity" (Foreman, 1998:130).

In recent years 'wildness' has become a more favoured expression in conservation circles than 'wilderness', partly because it has less strong connotations of pristine nature (see Section 2.4.1), and partly because 'wildness' emphasises the significance of natural *processes* (rather than entities, see above) and the idea of 'nature in charge' (Ridder, 2007a). Wild places are those areas where nature exists in accordance with its own principles of organisation, rather than humans' (Turner, 1996; Landres, 2010). Unsurprisingly, therefore, rewilding is strongly connected with ideas of "restoring self-regulating land communities" (Soulé & Noss, 1998:6) and for many is fundamentally about ecological processes (e.g. Fisher, 2013; Sandom *et al.,* 2013a). It describes a vision for large-scale restoration of natural processes to ensure self-sustaining ecosystems and minimal human intervention into the future (Brown *et al.,* 2011; Lorimer & Driessen, 2012). Being exempt from human manipulation is a critical 'wild' value (Cole, 2005); therefore, non-intervention has moved from being one of many potential land management tools to being the central conservation strategy under a rewilding ethos (Cooper, 2000). As "non-intervention and working with nature are in vogue" (Warren, 2009a:243; Willers, 1992), rewilding has been strongly connected with reducing human influence. This said, ideas of a hands-off approach to nature

conservation are strongly contested (Budiansky, 1995; Manning, 1997). Furthermore, because natural processes operate over significantly larger areas than traditional conservation discourses, restoring wilderness values is considered at the ecosystem-scale.[5] Rewilding is, therefore, sometimes referred to as 'continental-scale conservation' given its 'big picture' focus, rather than promoting the protection and representation of 'special features' through micro-management (see Soulé & Noss, 1998; Soulé & Terbough, 1999).

While efforts have been made to define the concept (e.g. Klyza, 2001; Foreman, 2004; Donlan, 2005), rewilding continues to evade absolute definition, being associated instead with vague ideas of "drawing back or de-intensifying agriculture or commercial forestry production" (Carver, 2007:267) or "resisting the urge to control nature" (Monbiot, 2013:9). In practice, therefore, rewilding sits somewhere between traditional ideas of ecological restoration and land abandonment, as is suggested by Gamborg *et al's.* (2010) two-pronged characterisation of wilderness management: (i) protecting what is left of 'original nature', and (ii) the more recent rise of the ecological restoration approach involving increasing amounts of reforestation and reintroductions, for instance.

Given its complicated roots and ascendency, rewilding is a debate of multiple parts. Ecologists debate the relative merits of species reintroduction (e.g. South *et al.,* 2000), social scientists comment on its societal implications and economic potential (e.g. Bauer *et al.,* 2009), while environmental philosophers pass judgement on its moral rationale (e.g. Drenthen, 2007). At present, there remains no holistic evaluation of how these different academic disciplines relate to one another as an applied rewilding strategy.

2.3.1. An ecological movement

Beyond its vague 'wilderness restoration' characterisation above, there is a subset of literature in which rewilding is presented as a well-defined, specific conservation strategy (e.g. Donlan *et al*., 2006; Sandom *et al*., 2013a). For commentators such as Foreman (2004), rewilding is simply an ecological vision which has little connection to broader recreational or aesthetic values of wilderness. In this sense, rewilding can be summarised as the "scientific argument for restoring big wilderness based on regulatory roles of large predators" (Soulé & Noss, 1998:5).[6] Premised on the fact that the catastrophic disappearance of species and habitats since the Pleistocene has left large

[5] Soule & Terbourgh (1999) consider 'scale' to be the distinguishable trait between rewilding and ecological restoration; while ecological restoration can focus on small-scale recovery, rewilding focuses on whole ecosystems, or even continents.

[6] Foreman (1998) provides a detailed overview of the key lines of ecological theory which have paved the way for the rewilding movement (e.g. metapopulation theory, the recognition of natural disturbance regimes, large carnivore ecology).

voids in ecosystem functioning, this new discipline is at the core of US Wildlands Project slogan, 'reconnect, restore, rewild' (Foreman, 2004). The general assumption is that by reintroducing species, constructing ecological corridors and facilitating natural regeneration the ecological functionality of an area – and thus ecosystem health – will be enhanced (Sandom *et al.*, 2013; Carver, 2013). Originating from the ecologically isolated mountain tops of South West Arizona, US, rewilding arguably started as practicable, "muddy-boots conservation" and has grown into a subset of ecological science (Table 2.2.) (Foreman, 2004:191).

Examples of practical rewilding actions	
1.	Reintroducing carnivores where possible
2.	Reintroducing other highly interactive species
3.	Halting predator and pest control
4.	Selecting and designing new wilderness areas based on ecological principles
5.	Remove livestock from much of the public lands
6.	Remove abandoned and unnecessary livestock fencing

***Table 2.2**: Some ecological practices which contribute to a rewilding vision, adapted from Foreman (1998).*

The clearest presentation of this visionary ecological movement was drafted by Soule & Noss (1998). They present the foundations for the widely adopted focus of rewilding on 'Cores, Corridors and Carnivores', the so-called 'three Cs', as the mechanism for countering further fragmentation and habitat loss. Ecologically, the principal contention of rewilding is that biodiversity conservation in the future is deliverable by focussing on keystone species[7] in large, connected, core areas of wilderness (Brown *et al.*, 2011). Because the disappearance of large carnivores or megafauna has been linked to biotic simplifications of ecosystems and subsequent biodiversity loss, their return is considered "instrumental in maintaining the integrity of ecosystems" (Soulé & Noss, 1998:5; Miller *et al.*, 2001; Jones, 2002; Hebblewhite *et al.*, 2005). The argument which manifests itself from this point is that the presence of carnivores requires large core areas exhibiting a high degree of connectivity to support them. 'Connectivity conservation' as it has been coined is thus premised on the importance of ecological networks and is explored in detail by Crooks & Sanjayan (2006) and Boitani *et al.*

[7] A species – commonly predators – which has a disproportionately significant influence on an ecosystem relative to its abundance (see Mills et al., 1993). It is sometimes termed umbrella species because making them a conservation target generally benefits broader ecosystem health and other species thereafter (see Lambeck, 1997).

(2007). Soulé & Noss (1998) in particular identify three major scientific arguments for focussing on large predators:

i) ***Top down regulation*** of ecosystems is initiated by top predators and has a great amount of control on the resilience, structure and diversity of ecosystems
ii) Predators require vast expanses of ***core protected land*** (i.e. for seasonal migration) which necessitates large scale conservation
iii) Core reserves are typically not big enough to satisfy predators' needs, requiring consideration of the ***connectivity*** of such reserves

Carnivores are not the sole focus. While they are a good indicator of ecosystem health (Noss, 1991; Mills *et al.*, 1993), keystone species are not exclusively carnivores (Soulé & Noss, 1998).[8] Rewilding often emphasises the significance of large ungulate herbivory in shaping structure and diversity in many terrestrial ecosystems (Gordon *et al*., 2004; Donlan, 2005; Donlan *et al*., 2006) and inducing trophic cascades (see Schmitz *et al.*, 2000; Soulé *et al.*, 2003; Terbough & Estes, 2010). In Europe in particular, the absence of key herbivores has generated ongoing discussion over reintroducing species such as the Aurochs, Tarpan and European Bison (Sylven *et al*, 2010; Hannock *et al*, 2010). As Section 2.3.4 outlines, pioneering projects such as Oostvaardersplassen have taken the lead in establishing a naturalistic grazing model to rectify this (see Vera, 2000; 2009a; Wigbels, 2000). Today a growing body of conservation literature focuses on predicting and quantifying the impacts of rewilding (e.g. see Laundré *et al.*, 2001; Ripple & Beschta, 2003; Sandom *et al*, 2011; 2013).

2.3.2. A philosophical movement

Beyond its ecological exposition, rewilding is a moral and ethical movement. "Biologists no longer shrink from the overtly moral argument that humanity has an obligation to protect and restore wilderness" (Fraser, 2009:12). Rewilding therefore acknowledges humanity's role as 'agents of change' in the world's global environmental crisis and is motivated by the perceived human obligation to reverse the historic trend of degradation (Hall, 2010).[9] It has an ecocentric spirit in that ecological

[8] It is essentially a term which refers to any species which is a strong interactor, including habitat-creating and landscape engineering species such as the beaver (*Castor fiber*) and ospreys (*Pandion haliaetus*). There is a large body of literature which explores the specifics of keystone species (e.g. Leaper *et al* (1999) explore the significance of wild boar as a vital tool for rooting and turning over soil).

[9] It is in this sense that Soulé & Terbough (1999) speak of rewilding as different from ecological restoration in that it is both a 'means' and an 'end' in itself; a means in that it provides a way of achieving viable conservation units, but an end in that we have a duty to repair past mistakes.

nature is considered to 'know best' and ecological concerns outweigh more anthropocentric values in terms of what is 'right' and 'wrong' (Robbins *et al.*, 2010). It seeks to move beyond exploitative, utilitarian views of nature, restoring a principled and honourable relationship between humanity and the natural world instead (Soule & Noss, 1998; Higgs, 2003; Foreman, 2008). Rewilding is a deep ecology offshoot from conservation biology, connecting strongly with the intrinsic value of wild places for the sake of wild places (Devall & Sessions, 1985; Hintz, 2005). As Elliott (1997) explores, the intrinsic value of 'wild nature' is far apart from its instrumental value to humans and presents a critical basis for human obligation to preserve and restore wilderness qualities. Therefore, while conservation biology provides the scientific roadmap to rewilding, "deep ecology arms rewilding advocates with the philosophical tools to argue for an ethics of sustainability (what to preserve and why)" (Robbins *et al.*, 2010:191).

Table 2.3 introduces some positions on the spectrum of environmental philosophy. See Gagnon & Barton (1994) for detailed discussion of different positions and philosophies in environmental management.

Ecocentrists		***Technocentrists***	
Deep environmentalists	***Soft technologists***	***Accommodators***	***Cornucopians***
• Faith in the rights of nature • Lack of faith in technology • Preservationist position • Nature is valuable in its own right – materialism for its own sake is wrong	• Faith in the rights of nature and community-oriented work • Lack of faith in technology • Strongly holistic perspective as concern for the whole takes precedence over the individual	• Faith in consensus building • Economic growth and resource exploitation is possible indefinitely	• Faith in the application of science and technology • Anthropocentric, instrumental value of nature

Table 2.3*: The range of human perspectives on the natural environment and sustainability. Table adapted from Glass (2011), Warren (2009a) and O'Riordan (1981). See Robbins et al. (2010) for a case study discussion of environmental positions such as ecocentrism and anthropocentrism in relation to wolves and rewilding. As will become apparent throughout following chapters, the philosophy of rewilding is not easily mapped onto these positions as it values the intrinsic value of nature, but also places faith in human action.*

2.3.3. A social movement

Today, conservation is recognised as more than a simple subset of biology (Robertson & Hull, 2001). It is inherently political in that it generally involves sacrifice on one side or another (Warren, 2009a). Responding to accusations of misanthropy and

undervaluing local needs,[10] conservation discourse has slowly transitioned towards thinking about people too (see Bulkeley & Mol, 2003; Bishop & Phillips, 2004). Engendering local support and ownership of conservation projects is now considered critical (Clark *et al.,* 2002; Bremnar & Park., 2007; Cairns & Hamblin, 2007), shown by the rise of terms like 'local participation and 'stakeholder participation' (Soliva *et al.*, 2008).[11] Ideas of 'sustainable conservation', which seeks to balance the needs of nature and the needs of people, are increasingly significant (see Johnston, 2000; Mitchell, 2005).

Unsurprisingly, therefore, the rejuvenating potential of wild nature and its spiritual values are a critical part of the global rewilding movement, as some advocates talk of rewilding humanity's relationship with the wild as much as restoring nature itself (Taylor, 2005; Wynnes-Jones, 2012; Monbiot, 2013a). Beyond these less tangible facets (see Bates, 2005) other human arguments for wilderness values are increasingly cited, most notably in the context of advancing ecosystem service provisioning and rural community economies (see deGroot *et al.*, 2002; Gordon *et al.*, 2004; Benayas *et al.*, 2009; Navarro & Periera, 2012).[12] Restoring wilderness value is perhaps, therefore, a "pivotal enterprise" (Fraser, 2009:6). Rather than being the quixotic pursuit of an Edenic wilderness of little relevance to contemporary society, rewilding is presented by some commentators as the answer to some pressing socio-economic issues such as land abandonment (Sylven *et al.,* 2010; Fraser, 2009). Wild places offer economic opportunity, for instance, in the form of ecotourism (Cole, 2008; PanParks, 2011) or flood alleviation (Parry *et al.*, 2007).[13] Given the potential for rewilding to offer a viable, economically sensible land-use option, calls for a comprehensive cost-benefit analysis of rewilding in comparison to other land-use options are an increasing part of the debate (Aykroyd, 2004; Taylor, 2007 Monbiot, 2013b). Seeing as the social and political response to rewilding arguably represents the greatest stumbling blocks in its future application, the significance of these utilitarian discussions should not be under-estimated, despite being largely antithetical to the philosophical foundations of the movement. Rewilding needs to "negotiate an uneasy expansion from a scientifically based conservation method into an ambitious social program" (Fraser, 2009:1; Donlan *et al*., 2006; Solvia *et al*., 2008; Jeeves, 2006), a difficult feat against public nervousness that rewilding may involve sterilising land from economic use.

[10] See Brockington (2002) and Brockington *et al.* (2006) for discussion of the idea of 'fortress conservation'.

[11] This, of course, presents additional problems in terms of increasing stakeholder numbers with increasing expectations; the need for "discourse coalitions" has therefore never been greater (MacDonald, 1998:241).

[12] Foster (1997) questions the place of economic methods in valuing nature and explores what role economics should have in establishing environmental objectives. Kareiva *et al.* (2007) explore ideas of shaping ecosystems for human welfare.

[13] There are calls for CAP review to identify and promote opportunities which might benefit the protection and restoration of wildlands, given the issues around land abandonment (Robertson, 2004).

2.3.4 Rewilding in practice

Rewilding is a global movement (Fraser, 2009), associated with projects and initiatives of varying scale and boldness (Warren, 2009a), from the continental scale vision for Pleistocene rewilding which aims to (re)introduce the descendants of Pleistocene megafauna (see Donlan *et al.*, 2006; Rubinstein *et al.*, 2006; Caro, 2007) [14] to the more intangible rewilding of the human heart (Taylor, 2005). As a North American concept, the most commonly cited instances of rewilding in practice are American, with much of the empirical evidence used to support its case being associated with the reintroduction of wolves into Yellowstone National Park in 1995 (Ripple & Beschta, 2003; 2007; Laundré *et al.*, 2001). In the absence of predation in Yellowstone, ungulate numbers became grossly out of equilibrium with carrying capacity, resulting in the steady decline of native aspen among other consequences (Halofsky & Ripple, 2008). The trophic cascades associated with the return of wolves (most notably relating to elk and aspen) demonstrated the contributions that missing apex predators could make to re-establishing a balance between ungulate prey grazing pressure (Coughenour & Singer, 1996; Schmitz *et al.*, 2000; Ripple & Beschta, 2006; 2008). Subsequently American wilderness projects, such as the Yellowstone to Yukon Conservation Initiative (Y2Y, 2009), have continued to grow, premised on the idea that restoring natural processes and protecting core wilderness areas is a pre-requisite of maintaining healthy, resilient ecosystems.

Figure 2.2*: Lamar Valley, Yellowstone National Park, where the gray wolf was famously reintroduced in 1995. Photo © Holly Deary*

In the Southern Hemisphere, notably New Zealand and Australia, rewilding embodies the need to progress scientific understanding. It is a grassroots movement, with many

[14] The more extreme rewilding visions, such as Pleistocene rewilding, "have achieved notoriety but little traction" (Chew & Hamilton, 2010:41). As such, this research focuses on more commonplace rewilding applications.

restoration projects trialling pioneering practical conservation strategies such as translocations, assisted colonisations and species substitutions (Parker et al., 2010; Seddon *et al.,* 2014). The snipe (*Gallingago gallinago*) has received particular attention in New Zealand where they are thought to be taking the lead on Avian rewilding (Hansen, 2010). Because New Zealand demonstrates great rewilding potential, in that humans have played a direct role in species loss, this evolving paradigm is moving quickly here. However, with the focus firmly fixed on the applied context, the dearth of literature on rewilding as a concept from this part of the world suggests it still needs to transition from piecemeal projects to a strategic movement.

Meanwhile, Europe is also making considerable moves towards recognising the role of wilderness values in achieving conservation objectives (Martin *et al.,* 2008; Lupp *et al.*, 2011). With the European Parliament's resolution on wilderness in 2009 calling for greater efforts to define, map and protect the wilderness resource, wilderness values are now a policy issue in Europe, which has not been the case before (Jones-Walters & Čivić, 2010; Sylven *et al.,* 2010).[15] The establishment of large scale initiatives, such as Rewilding Europe (Rewilding Europe, 2012), Pan Parks (Kun, 2012) and the Wild Europe Initiative (Wild Europe, 2013), which ultimately aspire to develop a European Wilderness Preservation System and co-ordinated wildland strategy for Europe, are testimony to this.

In Europe ideas of 'new nature' are a particularly Dutch phenomenon (van der Heijden, 2005). Oostvaardersplassen (a 14,000 acre nature reserve in the Netherlands) is arguably Europe's largest and most ecologically ambitious nature restoration experiment (see Vera, 2000). Its aim is to develop "a natural and dynamic ecosystem resembling those of the estuaries of the major European rivers prior to human disturbance" (Gamborg *et al.*, 2010:58). Particularly important to this project is the idea that pre-settlement wood-pasture was driven by mega faunal herbivores. Consequently, this visionary, flagship initiative endeavours to use extensive grazing regimes with wild horses and wild cattle as a conservation tool to create large-scale fen-communities (Colston, 2003; Martin *et al.*, 2008). These grazers themselves are self-sustaining, self-regulating with no supplementary feeding or management and are thus subject to the same selective pressures which past grazers would have been (a process of 'de-

[15] With the European commitment to a Wilderness Register in the 2013 European Wilderness Resolution, efforts to develop a working wilderness definition, the development of guidelines on wilderness management in the Natura 2000 network and a significant European conference in Prague in 2009 on 'Wilderness and large, natural habitat areas', wilderness momentum in Europe is significant (Coleman & Akroyd, 2009).

domestication', see Gamborg *et al.,* 2010).[16] The absence of intervention and the departure from conventional target specific grazing pressure in this model demonstrates the significance of natural ecological processes to the rewilding movement (Hodder & Bullock, 2009). Today Oostvaardersplassen is considered to be "naturally functioning" (ICM02, 2010:19) and its model is being replicated across Europe as part of a growing interest in the contribution that rewilding could make to nature conservation (Lorimer & Driessen, 2012). However, its minimal intervention ethos are now faced is raising critical questions over the endpoint of rewilding initiatives. If current population trends remain unchecked by management then there is real potential for "the konik horses and red deer [to] eventually out-compete the Heck cattle, possibly with the next ten years" (ICM02, 2010:25).

UK restoration programmes "may be a far cry from the US Wildlands Project strategy of 'core, corridors and carnivores'" (Taylor, 2004a:1), but nonetheless, with growing numbers of 'wildland initiatives' focused on habitat restoration and 'wild nature', rewilding is gaining pace on home turf too (Aykroyd, 2004). Wild Ennerdale, arguably the UK's most pioneering wildland project, was launched in the 1990s by the Forestry Commission and the National Trust who agreed a common vision for a 'wilder future' in the 4,500ha Ennerdale Valley in the Lake District. Today, Wild Ennerdale remains committed to allowing natural processes greater precedence in the long-term development of this valley ecosystem (see Browning & Yanik, 2004; Convery & Dutson, 2008). In the Cambridge Fens (e.g. Wicken Fen, see Colston, 2004) and Dartmoor area (Griffin, 2004) significant efforts to rewild have also been made as conservationists in Dartmoor National Park, for instance, commit to abandoning the current rhetoric of 'overgrazed moorlands and undervalued trees'. Rewilding is creeping up the Welsh nature conservation agenda too, for example with Hafod y Llan, in Snowdonia (Evans, 2008) and the working group for Coed Eryri and Cambrian Mountains (Taylor, 1995a). On a smaller scale, growing numbers of private land owners (e.g. the Burrells of Knepp Castle Estates (Wintle, 2009)) are abandoning modern farming techniques in favour of more naturalistic processes in the name of rewilding.

Scotland specifically has made significant headway, with the Scottish Government having commissioned a report in 2010 to review the status and conservation of wildland

[16]An in-depth look at the Oostvaardersplassen experience demonstrates some of the practical and ethical hurdles which rewilding must somehow overcome, for instance, when minimal intervention leads to herbivore numbers exceeding carrying capacity and consequently facing starvation and suffering. In 2005 an International committee was established (ICM01) to assess the management practice at Oostvaardersplassen in light of such concern, and in 2010 Staatsbosbeheer (the Netherlands conservation authority) advised that supplementary feeding and culling was necessary. Little consideration of how rewilding interfaces with legal and policy perspectives positions has been given.

in Europe (Fisher *et al.,* 2010). Prominent rewilding projects in Scotland are explored in Chapter 3.

2.4. Environmental Philosophy: the core of rewilding

Despite its rapid rise to prominence, rewilding is controversial (Bauer *et al.,* 2009). The desirability of its ecological consequences are challenged (e.g. the prospect of biodiversity loss, see Russo (2006) and Navarro & Periera (2012)) and rural communities are often opposed to the idea and particularly to the representation of their lands as 'wilderness' (Soliva *et al.,* 2008; Wynne-Jones, 2012). Beyond this, the very concept of rewilding is complex, and contestable. It is afflicted with issues over definitions and implementation which bring into focus some recurrent debates in environmental philosophy (e.g. the place of people, the value of naturalness) (Rolston, 1994; Foster, 1997; Katz, 1991; Murphy, 1994; Benson, 2000; Keeling, 2008; Warren, 2009a). To understand the meaning of rewilding one, therefore, has to address some fundamentally philosophical quandaries.

Rewilding is seemingly virtuous. However, as Warren (2009a) cautions, it is easy to assume that arguments for conservation action are self-evident, with little consideration of underlying assumptions. After all, "the most erroneous stories are the ones we think we know the best – and therefore never scrutinize or question" (Gould, 1996:57). Efforts to effect environmental change require difficult decisions about what is valuable in nature, and how this translates into management (Hilderbrand *et al.,* 2005). Applied conservation therefore exists at the perplexing interface between conservation biology and environmental ideology (Peretti, 1998). With its ambition to perpetuate wilderness qualities, it is rooted in the ideology of wilderness. Therefore, no review of rewilding would be complete without examining these ideological foundations. Understanding the conceptual anchors of wilderness is imperative to understanding rewilding (Arts, 2012).

2.4.1. The received wilderness idea: a troubled concept[17]

'Wilderness' is considered to be the purist form of nature imaginable, a paragon of virtue (Callicott, 2008). It evades simple definition and interpretation and is consequently defined in a multitude of ways (Nash, 2001; Henderson, 1992). As Section 2.2 has shown, wilderness has evolved through many different meanings (Glacken, 1967). These transitional wilderness arguments have resulted in confusion over what the

[17] The 'received wilderness idea' refers to the idea wilderness concept received from its framers over centuries, although the wilderness concept has predominantly been shaped in the first half of the 20th C (Callicott, 2000).

primary goal for wilderness management should be (Watson & Niccolucci, 1995; Sarkar, 1999; Callicott, 2000). Consequently, wilderness qualities are best characterised as a complex combination of environmental qualities and social factors (McMorran *et al.,* 2008). For some it is an attribute-focused concept (e.g. Leopold, 1949), while for others it a sociological state of being (e.g. Nash, 2001). The US Wilderness Act was the first real attempt to provide a clear, categorical understanding of the wilderness concept, defining it as 'an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain' (US Congress, 1964). In actual fact, the exact meaning of wilderness in the US Wilderness Act has been heavily debated and exposed as curiously abstruse (Foreman, 1998b; 2008; Friskics, 2008; Cole & Yung, 2010). Clearly, then, there are a variety of different, and potentially conflicting, values which act as a basis for initiatives focused on protecting wild nature (Gamborg *et al.,* 2012).

Beyond absolute definition, wild places are perceived as those places unaffected by humans and their activities (Cronon, 1996; Nash, 2001). It is a concept founded upon authenticity, purity and integrity (Hall, 2002), the rudimentary – but rarely scrutinised – bedrock of all nature conservation discourses (Hattingh, 2001; Hull *et al.,* 2001; Gustavsson & Peterson, 2003). Beyond these ideological foundations, the wilderness idea has become a moral imperative - how nature *ought* to be (Cronon, 1996). It provides a benchmark for evaluating conservation success as "pristine ecosystems are seen as the reference condition for ecological 'integrity' or 'health', and only the natural and native are worth cherishing" (Warren, 2007:438; Murphy, 1994; Brown, 1997; Hettinger, 2005).

But, the wilderness idea is far from uncontested. Criticism has, in fact, been relentless in recent decades. As conservation discourse has been continuously re-evaluated, and new ideas about nature and people have developed, the conceptual foundations of wilderness ideology have crumbled. Wilderness is alleged to be conceptually incoherent, purist, ethnocentric, anthropocentric, unscientific, outmoded and founded upon myth (Table 2.4) (see Snyder, 1990; Birch, 1990; Cronon, 1996; Callicott & Nelson, 1998; Katz, 1998). Debates relating to these criticisms will be explored during the remainder of this chapter.

Criticism	*Explanation*	*Literature signpost*
Defining 'wilderness'	Wilderness is a diffuse and intractable term. It has no absolute definition but, means different things to different people	Aplet *et al.* (2000) Birch (1990) Marshall (1930)
Wilderness is not 'untouched nature'	Wilderness claims to be *terra nullius* (literally meaning 'empty land'). But in reality wilderness is not history-less or free from people; the wilderness concept is therefore unhistorical	Callicott & Nelson (1998) Callicott (2000) Cronon (2008) Warren (2009b)
Wilderness is misanthropic and ethnocentric	By claiming to be history-less, the wilderness concept ignores indigenous people, rendering inhabitants prior to European settlement as invisible and ignoring the reality of their persecution by settlers to the 'new world'. Wilderness is therefore a Romantic, colonial concept	Callicott (1994) Callicott & Nelson (1998) Spence (1999) Warren (2009b)
Wilderness is purist	Wilderness is founded on ideas of nature without people and therefore finds no place for people to live sustainably as part of nature	Brown (1997) Cronon (1996) Nelson (1996)
Wilderness is socially constructed	Wilderness is as much an idea as it is a biophysical reality (a concept rather than a place). It is a function of individual perceptions and is thus subjective and personal	Cronon (1996) Oelschlaeger (1991)

***Table 2.4**: Key criticisms of the wilderness concept. In summary, wilderness critics contend that white Americans produced a system that freeze frames ecosystems, disparages native people and separates people from nature (Aplet et al., 2000). Today, wilderness has been 'de-mythologised', and the 'frontier landscape' is considered to be a myth of Western culture (Birch, 1990).*

2.4.1.1. The wilderness fallacy

Nature is not always as natural as it appears. For example, in New Jersey's Hutchinson Memorial Forest, a cherished stand of oak and hickory grew. Out of a belief that the forest had found a natural balance, conservationists advocated a 'non-interventionist' policy to protect its prosperity. The oaks did not reproduce. Instead maples grew, and environmentalists discovered the true artifice behind their 'natural'. Aboriginal burning of the under-storey favoured the development of an oak forest which naturalists had believed to be free of human influence (Postrel, 1999).

Consequently,

"The environment that we appreciate, and think of as natural, is often the creation of earlier human actions" (Postrel, 1999:155)

Therefore, as Peretti (1998: 186) says,

"If 'real nature' is human-free it becomes questionable if 'real nature' even exists"

'Wilderness' is described by critics as a colonial myth of pristine nature because the idea that the 'new world frontiers' were 'untouched' is a fallacy (Denevan, 1992; Spence, 1999; Cronon, 1996; Adams, 2003). In reality, what we call 'natural' usually turns out to be at least part human; "the pristine baseline – the 'natural landscape' – is a mirage, receding as it is approached" (Head, 2000: 4; Budiansky, 1995; Vogel, 2003; Dudley, 2011). Given that a human signature is now pervasive across the globe (Warren, 2009b: 256; McKibben, 2006), wilderness is criticised for being a concept that can only be sustained by supressing knowledge of the reality of human histories (Gómez-Pompa & Kaus,1992). Western society's wilderness ideal is thus criticised as being born of the 'myth of Eden' (Glacken, 1967; Postrell, 1999). It is a utopian vision of an untouched landscape; a mythic ideal of pristine nature in which wild places are sacred and humanity is profane (Cronon, 1996; Friskics, 2008; Warren, 2009). As alluded to in Section 2.3, the term 'wildness', instead of wilderness, offers an escape route from the fact that nature in any pure, pristine sense is long departed (Warren, 2009b). 'Wildness' moves beyond thinking in terms of spatially defined topographic units (i.e. 'wilderness areas'), and can encapsulate the fact that while wild places may show little evidence of humanisation, they are not untouched; invariably "some human strands are woven through the landscape tapestry" (Warren, 2009b:57). However, the pristine, *terra nullius* connotations of wilderness are difficult to shed (Foreman, 2000). The significance of the received wilderness ideology to the international conservation movement should not, therefore, be underestimated (Crifasi, 2005). As wilderness represents the antithesis of culture (Henderson, 1992), this dichotomy between humans and nature has become a fundamental organising principle in conservation (Holland & Rawles, 1993; Pretty & Pimbert, 1995).

Another pervasive fiction of the wilderness fallacy is the scientific myth of Clementsian ecology. This climax theory views nature as a series of successional phases which ultimately lead to a stable and permanent state (see Clements, 1936; Brown, 1997). As outlined in Section 2.2, this view of stable state nature dominated until the 1970s. From this perspective, nature remains in equilibrium until disturbed by an external force (e.g. people) (Callicott, 2002b). Ecology had thus "produced its own brand of teleology [as] popular concepts like the 'balance of nature' promised the existence of a set of conditions embodying how things were 'supposed to be'" (deBuys, 2008:33). Once this climax 'destination' had been reached, the best way to protect nature, therefore, was to

preserve by adopting a museum approach to conservation (Adams, 1997).[18] But from today's 'Gleasonian' perspective (named after Gleason (1926) who was an early pioneer of the 'nature in flux paradigm') there is no single or necessarily stable state towards which a system would tend in the absence of human influence (Jelinski, 2005; Aplet & Cole, 2010).

Taken together, the colonial myth of wilderness and the myth of equilibrium ecology have long suggested that, in the absence of humans, a truly natural condition of nature would persist. Therefore, unless disturbed by humans, ecosystems would "develop along well defined pathways to a stable, self-sustaining climax community" (Brown, 1997:193). Given the pervasiveness of these two myths, conventional wilderness discourse condemns humans as essentially unnatural, an artificial disturbance in the innate equilibrium of ecological order (Cooper, 2000). But, these ideas are now widely considered a Romantic conceit (Section 2.4.2). Wilderness *preservation* is associated with an outdated paradigm of ecology as it seeks to perpetuate "only a snapshot in [nature's] ever changing ecological odyssey" (Callicott, 2002a:412; Rolston, 1991; Pretty & Pimbert, 1995; Aplet & Cole, 2010). Furthermore, as humans are understood to be an "integral component in ecological, evolutionary and environmental processes" (Robertson & Hull, 2001:971), and most global environments are known to be modified, Cartesian conceptions of wilderness are considered unhelpful. The revelation that these two specific wilderness axioms are myths, therefore, has two particularly critical implications for nature conservation and the management of wild places:

i. People should be incorporated into conservation discourse because, while throughout the 20th Century conservation philosophy ignored the fact that people are part of nature, they have clearly had a significant role in shaping today's landscapes (Belskey, 2000; Robertson & Hull, 2001).
ii. Natural variability is a fundamental characteristic of ecosystem behaviour and should be allowed for in future conservation management (Brown, 1997; Willis & Birks, 2006), rather than working towards ideals of some authentic, single state of nature (Aitken, 2004). Wilderness management in the past has therefore been accused of attempting to fossilise nature (Callicott, 2002a).

From this re-evaluated perspective, there is no 'original condition' to preserve or aspire towards, and ideas of nature conservation without people are dismissed as idealistic (Aronson *et al.* 2006). Therefore, as concepts such as 'natural' appear "less useful through the lens of modern ecology" (Hobbs *et al.*, 2010b:34), discussion over possible alternatives has developed (e.g. natural range variability, authenticity, integrity, resilience – see Haila, 1999; Angermeier, 2000; Holdgate, 2001; Choi, 2007; deBuys,

[18] Where a more proactive approach was adopted, for instance restorative activity, the principles of ecological succession and its rules of ordered assemblage provided the theoretical rationale; after all, what is restoration if it is not "accelerated succession" (van der Valk, 1998 in Hilderbrand *et al.* 2005; Young, 2000).

2008; Hobbs *et al.,* 2010a; Stephenson *et al.,* 2010; Woodley, 2010; Dudley, 2011). Furthermore, with significant environmental stressors in this era of rapid environmental change, the need to think hard about some of the sacred tenets of conservation management is even more critical (Millar *et al.,* 2007; Cole *et al.,* 2010; Stephenson *et al.,* 2010). [19] The rise of the rewilding phenomenon globally is, in part, therefore a rearguard measure to climatic and environmental change. The goal of long-term wilderness stewardship in these environmentally turbulent times is a live topic (see Landres *et al.,* 2000; Meyer, 2000; Cole, 2003; Aplet & Cole, 2010; Cole & Yung, 2010; Lawhon, 2011; Graber, 2012).

2.4.2. Culturally determined narratives: social nature

Over the past 30 years, social processes have become a significant element of environmental management discourse (see Castree, 1995; Braun & Castree, 1998; Proctor, 1998a; Evely *et al.,* 2008; Andrews, 2012). Social nature theory posits that key conservation values, like 'naturalness' and 'wilderness' are socially constructed concepts (Evernden, 1992; Adams, 1996a). They are profoundly human creations laden with "moral values and cultural symbols" (Cronon, 1996:72), as opposed to biophysical realities (Greider & Garkovich, 1994; Castree, 2005; Whatmore, 2002). While these axiomatic concepts like 'nature' and 'wildness' retain their potency in popular conservation discourse, such contestation has revealed that they are subjective and comprise many layers of evolving meaning (McMorran *et al.,* 2008). Wilderness values are not, therefore, as detached from culture as commonly assumed (Katz, 1998; Williams, 2002). While the concept may be associated with non-human value, the parameters of which rely on the separation of nature and culture, in reality all environmental conservation is about human values (Reaser, 2001). Given the strength of arguments that nature is far less extra-human than commonly assumed (Proctor, 1998a), the inherent intertwining of nature conservation with societal values is now widely accepted ((Nash, 1989; Wilson, 1992; Evernden, 1992; Cronon, 1996; Demeritt, 2001; Midgley, 2007). This social constructivist critique therefore dismisses a Cartesian view of wilderness as utopian (Nash, 2001). In reality, the 'abstract wild' is a fanciful, imaginary idea which is ambiguous because of the assortment of meaning that people place on it (Lamb & Goodrich, 2006).

Given the significance of human values, it follows that environmental debates are characterised by a wealth of positions and different perspectives (Whitehouse, 2009). While the biophysical attributes of the Cairngorm Mountains, for instance, may be constant, the meaning and values attributed to them by people, including conservationists, are diverse and constantly emergent (Greider & Garkovich, 1994). Furthermore, if wilderness values are a function of individual values and perceptions,

[19] See discussions of this era of novel climates and no-analogue ecosystems in Williams & Jackson's (2007), Hobbs *et al.* (2009) and Perring *et al.* (2014).

then conservation management cannot be divorced from social narratives. This means that conservation is driven by cultural and social processes as nature is constructed – and constantly reconstructed – through cultural lenses (Healey & Shaw, 1994; Crifasi, 2005; Midgley, 2008). What is imperative, therefore, is that these frames of reference are acknowledged and incorporated into conservation discourse (Murphy, 1994; Adams, 1997).

"Both nature and science are dear to the heart of conservation" (Robertson & Hull, 2001:976). Nature is the ontological bedrock of conservation and science is its epistemological foundation. But paralleling the rise of social nature has been a waning faith in science's ability to understand the subjective and culturally entrenched dimensions of nature (Trudgill, 2008). Conservation science is "inescapably normative" (Barry & Oelschlaegar, 1996:905). Its heavy reliance on scientific precepts has led to accusations of scientific imperialism (Roebuck & Phifer, 1999; Swart *et al.*, 2001; Adams, 2003). Science has long been central to identifying conservation landscapes and determining where, how and when humans should intervene in them (Mair, 1986; Dayton, 2003). In the UK in particular, science has provided critical justification for action (see Adams, 1996a). But science provides an instrumentalist, positivist approach to nature whereby scientists are "external to natural processes, spanner in hand" (Adams, 1996a:90). But by counselling 'doing' and 'undoing', science assumes that it can discern what is right and desirable from what is wrong and undesirable in nature (Pretty & Pimbert, 1995; Aitken, 2004). In truth, notions of 'harm', 'degradation' and 'change' are human values projected onto nature because "we live not inside reality, but inside our representations of it" (Washington, 2007: 441; Mabey, 2005; Larson, 2007).

While scientists believe they are making impartial observations and understand the way nature *really* works, in actual fact, their views and conclusions are profoundly influenced by social context (Adams, 1996a; Svarstad *et al.*, 2008). From a constructivist perspective, scientific knowledge cannot be regarded as an absolute representation of nature, but instead as a "socially constructed natural-technical object of enquiry" (Bird, 1987:255; Massey, 1994). In reality, science only speaks the language of half of the conservation story, viewing the natural world through objective evaluation alone (Reaser, 2001; Jelinksi, 2005). Critically, science cannot elucidate the cultural and historical contexts of conservation which are necessary for the establishment of robust conservation policy (Cooper, 2000).

There is significant irony in the fact that the motivations to conserve nature spring from love of nature, but acknowledging such emotive underpinnings is generally understood to undermine conservation arguments (Milton, 2002). However, while scientific frameworks do add weight to environmental arguments (Adams, 1996a), the need to understand that conservation is a human enterprise, and thus loaded with values is widely accepted in academic circles today (Holdgate, 2003; Aitken, 2004; Davis & Slobodkin, 2004). Restoration is a cultural activity (van Diggelen *et al.*, 2001).

Therefore, "culture, custom, poetry and legend are as important as scientific values" (Holdgate, 2003:59). Robertson & Hull (2001:970) describe a vision of philosophy and practice "that goes beyond biology and beyond the norms of modern science to construct knowledge that is useful for environment decision making" in their idea of a 'public ecology'. Taylor (2011) even calls for a shift towards a 'shamanic ecology'. Rather than relying on the positivist precepts of science, the social nature paradigm points towards the importance of deconstructing conservation and challenging its assumptions by recognising the significance of the cultures of nature conservation (Midgley, 2003; Aitken, 2004). Given the significance of social nature arguments in this "post-normal science" era (Robertson & Hull, 2001:971), the scientific foundations of nature conservation are seemingly less appropriate and absolute than is generally assumed (Demeritt, 1996; Warren, 2007). The danger is that because these subjective values do not accord with systematic, scientific frameworks, their significance to conservation will be overlooked, both in policy-making and in practical management (Cooper, 2000).

2.4.3. Problems of parameters, definitions and implementation in conservation

All conservation discourse raises challenging questions over management goals and targets (White & Walker, 1997; Bakker *et al.*, 2000; Lackey, 2004; Hall, 2005; 2010). Rewilding is no exception as it brings into focus the meaning of 'wild' and 'natural'. In the context described above, the parameters of these fundamental conservation values have been increasingly blurred (Williams, 2002). While 'natural' and 'wild' are generally considered to mean 'unmodified by human activity' (Elliott, 1997), the idea of a non-arbitrary pre-disturbance baseline is elusive (Mabey, 2005). In truth, foundational concepts in conservation are slippery and used in multiple different ways as different conservationists have a range of interests and priorities (Meech, 2005; Gamborg, 2012). The ideals of 'wilderness' and 'naturalness' are therefore commonly recognised as loaded terms, and operational definitions for them have still not been reached (Brown, 1997; Mackey *et al.*, 1998; Yung *et al.*, 2010). Debate over the conflicting meanings and mandates in conservation continues in earnest today (see Aplet & Cole, 2010; Hobbs *et al.*, 2010a).

Efforts to formalise environmental stewardship goals have been extensive (see Hobbs & Norton 1996; Landres *et al.*, 1999; Simberloff, 1990; Stanturf, 2005; Harris *et al.*, 2006; Hobbs, 2007). Peterken (1996), for instance, presents three states of naturalness which offer potential restoration options:

i. *Original naturalness*: conditions which existed before humans became a significant ecological factor

ii. *Present naturalness*: the conditions which would exist now if humans had not become such a significant ecological factor[20]

iii. *Future-naturalness*: the state that would develop if human influence was removed.

However, Hobbs (2009) challenges the usefulness of this classification in a practical sense by asking how one could possibly know what conditions were like prior to human influence and whether it is meaningful to speculate about what might happen if human influence were completely removed. The key point, however, for this discussion is that, in reality, "the concept of naturalness is so broad and vague that a wide variety of policy interpretations and management actions can be pursued and justified" (Yung *et al.*, 2010:78). Rewilding, therefore, is not as straight-forward as it might seem at first. It involves profound choices and judgements (Mace *et al.*, 2007) (Fig.2.3). The diversity of potential conditions and contexts associated with environmental restoration has led some commentators to argue for flexibility in goal setting (Landres *et al.*, 1999; Ehrenfeld, 2000).

The nature of philosophical questions in conservation discourse

- What should rewilding strive to achieve, conserve or restore, why, and for whom?
- What should the aims of wilderness management and restoration?
- What is the place of humans in the natural world, and thus, what level of human intervention is appropriate in rewilding?
- What are the appropriate spatial and temporal scales that rewilding should operate within?
- What blend of scientific, utilitarian, moral and aesthetic arguments should guide conservation action?
- Which species should be prioritised (e.g. recent casualties vs. longstanding absentees)?

Figure 2.3*: Critical questions in the philosophy of conservation. Based on des Jardin, 1997; Benson, 2000; Warren, 2009a; Drenthen et al., 2009; Naeem, 2013.*

Ideas of restoring naturalness and wildness are grounded in a sense of 'belonging' and 'not belonging'. This requires a clear-sighted understanding of the spatial and temporal boundaries of the 'here and now' and tacitly assumes that conservationists understand what is 'native' and 'good' (Aitken, 2004). However, the challenge of establishing baselines for conservation and restoration has been extensively debated (see Moore *et al.*, 1999; Ehrenfeld, 2000; Mabey, 2005). In reality, values and ideologies in conservation are relative in both space and time; they cannot be unequivocally defined

[20] The difference between 'original' and 'present' natural is important because it encapsulates the idea that even without anthropogenic influence, ecosystems would change and evolve (Alexander, 2008).

or quantified (Hattingh, 2001; Warren, 2007). When every scale can be logically defended or championed and there are no unequivocal answers, the boundaries of 'natural', and 'native' for instance, are elusive (Callicott, 2002a; Townsend, 2005). In reality, by employing different frames of reference, "a line can be drawn anywhere with regard to biological era or the degree of naturalness envisaged" (Taylor, 2009:52; Gobster & Hull, 2000; Baskin, 2002 Kirby, 2004).

Broadly speaking, industrialised populations are considered 'unnatural', meaning that the onset of human modification marks the beginning of the end of nature. But, how to identify this as a point in time has perplexed academics for a long time (Crosby, 1986; Rodman, 1993; Head, 2000). With fragmentary knowledge about the arrival of humans and the progressive nature of their technological development, pre-settlement conditions are a questionable target (Callicott, 2002a; 2011). The onset of civilisation does not necessarily mark the onslaught of human modification. At which point, therefore, did humans cease to be natural and become technologically advanced enough that they denuded naturalness instead (Taylor, 2005)? The severity of human alteration that is needed to compromise naturalness is dependent upon the interpreter's conceptions of natural, and their philosophical position on the relationship between human activity and naturalness (Meech, 2005). For instance, it is significant that prehistoric hunter gatherers probably did not think of their lands as 'wilderness' because they were a living part of it (Oelschlaegar, 1991). With human influence of some magnitude or another extending back many millennia in most regions, any baseline for pristine nature seems arbitrary (Callicott, 2002a; Hinderland *et al.,* 2005). No landscape can be inherently natural; it is only natural as a result of specific criteria applied by conservationists because there is no uncontested golden age before which nature was natural, and after which it was not. Even if there were, it is so long ago as to be irrelevant because of climatic and environmental change in the interim. Conservation practice therefore involves privileging favoured historical geographies over others, and this raises a multitude of questions over who determines what a 'good' landscape is, and using what criteria (Katz, 1998; Callicott, 2002a; Warren, 2007). To further complicate matters, ongoing human induced change in contemporary landscapes makes it progressively harder to distinguish 'natural' from 'anthropogenic' landscapes (Crifasi, 2005).

Debates over concepts, language, scales and baselines are well traversed in nature conservation discourse, particularly in the native vs. non-native species debate (see Reaser, 2001; Shrader-Frechetter, 2001; Simberloff, 2003; Warren, 2007; Selge *et al.*, 2011). Restoration ecology and invasion ecology have long been intricately related (Davis, 2000); to speak of restoration consisting of "an indiscriminate mix of native and exotic species seems oxymoronic" (Callicott, 2002a:415). Discussions relating to the alien species debate can therefore shed light on critical rewilding issues and challenges, such as the criteria for species reintroduction (Gobster & Hull, 2000; Woods &

Moriarty, 2001; Warren, 2007, 2011). For example, the 'human assistance' criterion, which labels species 'alien' if they have extended their range 'unnaturally' at the will of people needs to be slackened when reintroducing formerly native species (Warren, 2009a; Sandler, 2010).[21] Aside from these problems of definition and implementation, with the telos of ecological systems challenged by disturbance ecology, any historical benchmark is arbitrary and subjective (Ridder, 2007b; Hayward, 2009). For this reason the validity and desirability of trying to recreate a simulacrum of the past has been called into question in recent years (see Rawles & Holland, 1994; Peterken, 1996; Brown, 1997; Clewell & Aronson, 2006). More restorationists now recognise that restoring nature's functions, rather than just its forms, is necessary (Hall, 2005), a sentiment which rewilding encapsulates.[22] This said, "it is not always clear whether we look back in anger to a golden past or forwards to some unknown 'futurescape'" (Rotherham, 2014: iii). Rewilding aspirations vary from Oostvaardersplassen's vision for a prehistoric landscape to a growing body of future-oriented conservation strategies (see Adams, 2004). The fact remains, therefore, that although this baseline debate is implicit in the very term '*re*'wilding, there has been virtually no debate about the temporal frames of this new conservation discourse.

2.4.4. Natural versus cultural values and the place of people: the 'great divide'

At the core of these issues over definition and implementation lies a deeper, fundamental question about whether people can be considered part of nature or not (Pojman, 2000). In fact, a significant amount of wilderness criticism is related to the fact that it sustains a pre-Darwinian separation between people and nature which is no longer supported.

2.4.4.1. The nature/culture dichotomy and its demise

Nature conservation is sustained on dualisms: natural/unnatural, wilderness/civilisation, native/non-native, instrumental/intrinsic value, wild/domestic, development/conservation, action/inaction (Crifasi, 2005). All such dualisms emerge from a metaphysical distinction between nature and culture (Rolston, 1999; Bollen *et al.*, 2007). The wilderness idea in particular is a manifestation of this sharp, dichotomous relationship, presenting a "crude conflict between the 'human' and the 'nonhuman'" whereby human action degrades wilderness and natural places are places where humans are not (Friskics, 2008:384; Callicott, 1994; 2000; Cronon, 1996). The 'otherness' of the natural world has always been critical to conservation. However, as

[21] Assigning the spatial parameters of 'natural range' for a given species is no easier (see Warren, 2007; Kendle & Rose, 2000).

[22] Equally, it is paradoxical to appeal to nature for answers to our current environmental crisis by placing faith in the idea that 'nature knows best', while simultaneously valorising a specific set of conditions (i.e. a historical landscape) as idealised (Katz, 1998).

pervasive human dimensions of nature have been recognised, "virgin nature has been exposed as promiscuous and naturalness revealed as a broad spectrum, not an absolute referent" (Warren, 2007:438). The pervasive nature/culture dichotomy is rooted in the Aristotelian principle of the 'excluded third' whereby something is either 'one' or the 'other' (Jelinski, 2005). But, this reductionist simplification of complex phenomenon to dualisms and dichotomies is now recognised as one of the most problematic tenets of nature conservation to date (Clark, 1992; Haila, 1999; Demeritt, 2001; Crifasi, 2005). "This 'law of the excluded third' has had a paralysing effect on many scientific and societal debates" (Keulartz, 2009:36) as its dualistic foundations have forced black and white perspectives on the natural environment.

The Cartesian dualisms implicit in the guiding principles of naturalness, wildness and authenticity are anachronistic in the light of the rejection of equilibrium ecology and the myth of Eden (Warren, 2007). Dichotomies are unable to account for the shades of grey which characterise the reality of the natural world (Taylor, 2005; Wiens, 2007). In reality, 'natural' and 'artificial' (and 'wild' and 'civilised') represent two ends of a complex continuum, not mutually exclusive entities (Warren, 2007; Friskics, 2008). "Calling some landscapes 'natural', 'cultural', or 'artificial' ignores the fact that they are rarely one or the other" (Crifasi, 2005:626). Furthermore, a central criticism of the dichotomy is that it ignores the fact that, since Darwin, people have been considered part of nature (Callicott, 1991); humans have been subject to the same evolutionary processes as all other living species (Vogel, 2003).[23] There is, therefore, no place for simplistic narratives which equate 'natural', in a human-free sense, with the moral highground (Warren, 2009b). Doing so is to commit the naturalistic fallacy (Moore, 1903; Larson, 2007). The philosophical naturalism implicit in the nature/culture dichotomy has broadly led to the rejection of this bifurcating organising principle in academic circles (for the reasons explored above, e.g. the constructed nature of natural) (Descola & Pálsson, 1996; Demeritt, 1998; Valentine, 2004).[24] The attack has been largely twofold; "the first attack subsumes culture under nature, and the second subsumes nature under culture" (Moriarty, 2007:6) because firstly, humans are now considered to be part of nature, and secondly 'nature' is understood to be a socially constructed concept. Accounts of the theoretical collapse of this guiding principle are plentiful (see Demeritt, 1998; Proctor, 1998c; Castree, 2004; 2005).

The attack has, indeed, been furious. However, some academics defend this central distinction, arguing in particular that the 'otherness' of nature is important to maintaining environmental consciousness (O'Brien, 2006; Fenton, 2006; Moriarty,

[23] The debate around whether humans are part of nature is huge and relentless. Vogel (2003) provides critical insight into why humans have historically considered themselves apart from nature; e.g. debates surrounding rational thought, Cartesian philosophy and Darwinian theory.

[24] Broadly speaking, this dichotomy still lives on in conservation policy and practice (Coates, 1998; Castree, 2004).

2007).[25] Such commentators point out that the alternative is to assume that because humans are natural, everything humans do is natural. Moriarty (2007) provides a detailed account of a middle ground perspective in which rejecting philosophical naturalism does not have to be synonymous with rejecting the nature/culture dichotomy. He suggests that the continuum perspective of nature as 'relatively unmodified' allows nature to be distinct from culture in a non-absolute sense, a perspective which manifests itself in two key points: (i) for 'nature' to be meaningful it must be in counter-distinction to something, "there must be something that is not natural" (Moriarty, 2007:8), and (ii) rather than thinking of nature as something which is contrasted with the supernatural, it should be framed as something which is in contrast to the products of human culture (see Moriarty, 2007 and Plumwood, 1993, for more detail).[26]

2.4.4.2. The cultural landscape movement

Either way, it is apparent that nature and culture are not the antithesis of one another. Human agency affects nature, and nature affects human agency as nature and culture are in a constant state of interplay (Head, 2000; Papayannis & Howard, 2007). To define nature in opposition to culture therefore sets an arbitrarily high standard which can only lead to the conclusion that there is nothing worth protecting anymore (Budiansky, 1995). Furthermore, it provides little opportunity for people to live sustainably within their environment (Brown, 1997; Cronon, 1996; Sarkar, 1999; Havlick, 2006). Therefore, while the received wilderness idea has ecological, recreational and aesthetic benefits, these are at the cost of creating unworkable boundaries between humans and nature (Cronon, 1996). But, from the demise of dichotomous thinking, debates about balancing human needs, stewardship and the intrinsic value of non-human nature have arisen, giving rise to new conservation paradigms relating to sustainable development (Lélé, 1991; Norton, 2005; Dresner, 2008) and cultural, or socio-ecological, landscapes (Jaques, 1995; Taylor & Lennon, 2011; Rotherham, 2014). Non-dualistic discourse calls society to accept responsibility for human action, thereby suggesting that "human management of the environment is an unavoidable responsibility, however Romantically appealing the ideas of wilderness and non-intervention are in theory" (Warren, 2009a:16; Brennan, 1993). As per Section 2.3.3, conservation has been strongly criticised for its 'specialised conservation landscape' approach which has alienated humanity from nature, "making people poachers in their own land" (Toogood, 1995:104).[27] The emergence of the cultural landscape concept allows conservationists to acknowledge the eco-cultural origins of landscapes and to confront the reality of human-nature relationships (Whatmore, 2002; Burkhardt *et al.,* 2012; Rotherham,

[25] Plumwood (1998) explores the fact that it is the 'dualism' which needs to be eliminated, not the 'distinction'.

[26] Warren (2009a) explains that in common parlance, 'natural' is normally used to differentiate countryside from built-up areas, as opposed to implying the absence of any human influence.

[27] This has given rise to a significant amount of debate over 'land sparing' vs. 'land sharing' (see Phalan *et al.,* 2011).

2014).[28] If people are part of nature, as the demise of the nature/culture dichotomy suggests, then conservation needs to be woven into everyday life to reconnect people and nature (Adams, 1996a).

However, there is perhaps an inherent contradiction between sustainable conservation and rewilding paradigms. Commentators like Robinson (2011) argue that restoration visions need to incorporate socio-cultural interests, whereas leading rewilding proponents Soulé and Noss (1998) suggest that rewilding can find little place for socio-economic objectives. This promises to be a particularly problematic tension in the more populated wild places of Europe, such as Scotland (Brown *et al.,* 2011) (Chapt.3). The fact that this creative 'new nature' paradigm has been criticised for side-lining landscape history and broad socio-cultural interests (van Der Heijden, 2005), for instance, indicates that – with its roots in the concept of wilderness – little consideration has been given to the integration of rewilding aspirations with human histories and the protection of cultural values. A concern explored by Rotherham (2013a; 2014) is that, if rewilding is considered to mean abandonment, then it could perpetuate the long-standing, dualistic imperatives in conservation and ultimately lead to cultural severance by breaking down fundamental, often subsistence, relationships with the natural environment and ending traditional local management. While the place of people in wilderness is an unquestionably complex debate, "to take people totally out of nature is not natural" (Rotherham, 2014:xiv). Instead, finding positive relationships between people and nature and ensuring that we can locate ourselves within our environment drives current conservation thinking today (Baldwin *et al.,* 1993; Taylor, 2005). Ultimately, if "human beings are a fragment of nature, and nature is a figment of humanity" (Kemal & Gaskell, 1993:3) it is important that our rewilding aspirations do not inscribe the nature/culture binary.

2.4.5. Nature's intrinsic value and paradox: does rewilding add value or subtract value?

A particularly strong promise of today's rewilding aspirations is the idea that wilderness qualities can be restored (Arts *et al.,* 2011). "In all situations other than conservation, naturalness is generally considered to diminish with deliberate human intervention" (Ridder, 2009:8). But the idea that, for some unexplained reason, nature – so often defined through non-human values – is restorable through human intervention remains controversial (Shelton, 2004; O'Neill *et al.,* 2008; Warren, 2009a). Rewilding, and restoration ecology more broadly, rest on two contestable assumptions: (i) that degraded environments can, in fact, be restored by human action, (ii) that the value which has been lost through degradation is also restorable. However, if nature's autonomy is

[28] See Sauer (1925), Rubenstein (1989), Jones (1991), Schein (1997), Phillips (1998) and Plumwood (2006) for details on cultural landscape thinking and its significance to nature conservation.

central to its intrinsic value, and thus to the wilderness concept (see Hettinger, 2005, Woods, 2005; Landres, 2010), then is 'managing wildness' not oxymoronic (Cole *et al.*, 2008)? To suppose that humans can improve the impulsive spontaneity of *wild nature*, and do so intentionally and to their own specification, certainly appears to be a contradiction in terms (Rolston, 1991; Katz, 1996; Higgs, 2003).[29] Environmental restoration, therefore, raises questions over the extent to which natural environments can, and should, be restored to their original form (Hall, 2005). Accordingly, environmental philosophers have long been engaged in complex debates over the authenticity of restored environments (see Gunn, 1991; Cowell, 1993; Castree, 1995; Katz, 1996, 2000a; Clewell, 2000; Eden *et al.*, 2000; Brook, 2006; Gobster, 2007).

Elliott (1997) and Katz (1992) provide the most sustained contribution to this debate, arguing that natural, non-human processes bestow a value-adding property which cannot be replicated. From this perspective, restored environments are 'fakes' because, even if there were no perceptual difference between restored and 'first nature', the ontological status of the two could not be the same. Restored landscapes will always be an artefact of human ingenuity (Vogel, 2003). Accordingly, "the values intrinsic to wilderness cannot, on pain of both logical and empirical contradiction, be 'improved' by deliberate human management, because deliberation is the antithesis of wildness" (Rolston, 1991:371). The implication is that true restoration is impossible if it is intended to restore intrinsic value (Katz, 1991; Chapman, 2006). While restoration might add instrumental value, restored landscapes will always be a superficial semblance or simulacrum of a more complicated nature as engineering induces more artifice (Graber, 1995; Pojman, 2000; Throop, 2000). Some pervasive metaphors have been used to explore the complexity of the debate (notably the 'art metaphor' and the 'artefact analogy') but are too extensive to explore here (see Elliott, 1997; Katz, 1991; 1992; Cowell, 1993; Glazebrook, 2003; Keulartz & Weele, 2009 for a full discussion).

Considerable efforts have been made to counter the claim that restored nature is fake and so of limited value (see McQuillan, 1998; Callicott, 2002b; Chapman, 2006; Moriarty, 2007). They typically begin with the fact that the 'faking nature' thesis depends on two dichotomies which are undermined by today's post-Enlightenment narratives: i) the human/nature dichotomy, ii) the natural/artificial dichotomy. Most criticisms of restored nature originate from this bifurcated thinking and therefore assume that nature and culture can, in fact, be meaningfully separated (Light, 2000). Chapman (2006) explores this idea by providing a detailed account of how the paradox of restoration links with the parameters of natural. In this vein, he suggests that there are some binding assumptions shared by critics who believe all consequences of human intervention to be artefacts (referring to such individuals collectively as 'genesis theorists'):

[29] The idea of an interventionist paradox in nature conservation has been widely commented on (see Graber, 1995; Swart, 2005; Cole, 2000a, 2008; Richmond & Brackner, 2009).

i) Only biological processes uninterrupted by human intervention possess natural value,
ii) Understanding these biological processes requires knowledge of their natural history development and origin,
iii) Wilderness and wildness are synonymous[30]

These assumptions hold that 'natural' is independent of human action and influence (thus embodying the colonial myth of wilderness (Section 2.4.1.1). By readjusting the parameters of natural to align with fundamental shifts in contemporary conservation discourse, the faking nature contention appears anachronistic (Chapman, 2006). While genesis theorists typically note the demise of the nature/culture dichotomy in academia, they are accused of disregarding or turning a blind eye to its implications in resolving this circuitous debate (Moriarty, 2007). Ultimately, a number of counter-critics favour environmental pragmatism (see Light & Katz, 1996; Parker, 1996; Hintz, 2005). While dismantling the epistemological and ontological foundations of wilderness is thought-provoking, philosophers are called to rise to the challenge of making a more positive contribution to policy and discourse than is currently the case (Light, 2000; Irwin, 2001; Havlick & Doyle, 2009).

2.5. Summary: conservation in a postmodern context

We live in an ambiguous, postmodern context (Gare, 1995; McGuigan, 1999). Can rewilding, with its roots in ideas of space, place, identity and belonging make sense in such a context when some of its most axiomatic ideologies appear incompatible with this current state of disorientation (Gare, 1995; Harvey, 1996; Larson, 2007)? Postmodernism is itself resistant to definition (Butler, 2002; Washington, 2007), but its fundamental principles, have resulted in a significant attack on wilderness and naturalness (Callicott & daRocha, 1996; Cronon, 1996; Willers, 2001; Drenthen, 2007; Gray, 2008). As postmodernists reject grand narratives or the idea of any absolute referent for nature (Dear, 1988; Agger, 1991; Holtzhausen, 2000), simplistic narratives which cling to 'natural v. unnatural' are considered archaic and unworkable (Cronon, 1996; Adams, 2003; Mabey, 2005; Warren, 2007). Furthermore, values of purism and authenticity, which are integral to conservation discourse, are difficult to maintain in the weak frameworks offered by globalisation (Hattingh, 2001; Butler, 2002; Lowe & Paavola, 2005). The natural/artificial dichotomy, which celebrates purity and draws lines across hybrid spaces, does not, therefore, sit comfortably with a pluralistic society which celebrates hybridity (Relph, 1991; Hattingh, 2001; Ivakhiv, 2002; Williams,

[30]Chapman (2004) explains this "inseparability thesis" in detail, where he suggests that an ontological and conceptual distinction between wilderness and wildness is important to resolving the faking nature debate. The significance of this thesis is elaborated upon in following chapters.

2002; Castree, 2005; Fall, 2005).[31] Defending the 'ecological *status quo ante*' is also hard against narratives which assume nature is in constant flux (Keulartz & Weele, 2009). Furthermore, given that the assumption that an objective, knowable reality exists has given way to a view that "the universe is chaotic and unknowable" (Grbich, 2007:10), the absolutist positives upon which conservation relies are challengeable. From this post-Enlightenment perspective, only situated narratives and knowledge can provide explanation and interpretation of the world (Jelinksi, 2005). Conservation should, therefore, reflect knowledge and understanding of site histories, place ecologies and human identities (Garvoille, 2013; Rotherham, 2014). Perhaps most critical is consideration of the positionality of people in wilderness discourse and restoration efforts (Gray, 2008).

The persistence of terms like 'nature' and 'wilderness' in the face of sustained critical attack demonstrates the challenge of "moving beyond familiar discursive terrains but also services as a reminder that conceptual foundations frequently remain unexamined" (McMorran *et al.*, 2008:177). It is intriguing that despite extensive criticism of its conceptual foundations, 'wilderness' is making a global comeback (Navarro & Periera, 2012). But while ideas of 'wild nature' are an ambiguous target and benchmark for conservation (Robertson & Hull, 2001; Hofmeister, 2009), perhaps this ambiguity offers an opportunity to rethink wilderness in a way which overcomes the criticisms and myths upon which it has been historically contingent. At present, our conceptions of nature and wilderness provide little space for people, setting an "arbitrarily high standard against which cultural and productive landscapes are regarded as inferior" (Brown, 1997:196). The historical and conceptual baggage associated with the term 'wilderness', therefore obscures the potential contribution that such areas could make to contemporary conservation (Callicott, 2000; Washington, 2007). Might rewilding offer the opportunity to rethink nature in a way which moves beyond ideas of an Edenic wilderness? Amidst the conceptual reconfigurations in conservation explored in this chapter, what will, and should, rewilding mean to future conservation? With its sense of wildness, long human history and ambitious rewilding projects, Scotland's distinct wildland context arguably offers a good context for exploring this (Chapter 3).

[31] Global climate change adds a new dimension to this postmodern debate and has led to the rise of expressions like 'mixecology' and 'recombinant ecology' and 'cosmopolitanization' to describe the current ecological context (see Soulé, 1990; Rotherham, 2014).

Chapter 3

Rewilding potential in the Scottish Highlands

3.1. Introduction

Given that ideas of wilderness in Scotland differ significantly from those in North America and elsewhere, this chapter aims:

- *To introduce the specific research context of the Scottish uplands*
- *To discuss Scotland's distinct 'wildland' concept*
- *To chart the development of rewilding in Scotland to date, both in theory and practice*

Scotland is no stranger to 'wilderness'. The "mist-shrouded mountain; the solitary pine; the distant sunset" are all recurring motifs in the country's rich tapestry of natural heritage (MacDonald, 1998: 241; Samuel, 2000). With a 'natural backcloth' of rugged mountains, remote lochs and dramatic coastlines, the 'pristine Highland wilderness' is etched into the Scottish psyche.[1] Scottish cultural identity is thus founded upon a long and enduring relationship with these wildlands, reflected in the marketing of Scotch whisky and tourism (Fig. 3.1), and popular culture as landscape photographers like Colin Prior pay homage to its wildness through the camera lens (Habron, 1998a; Toogood, 2003). Accordingly, while both England and Wales exhibit landscapes of wild character, Scotland's "mythic heart" presents the greatest opportunity for realising a 'wild future' in the UK (Taylor, 2005:7; MacDonald 1998).

[1] Soliva *et al's* (2008) study asserted that Scottish stakeholders link the uniqueness of the mountain ranges to 'wildness' more than any other nationality.

Figure 3.1*: From 'Wilderness Scotland's' website (http://www.wildernessscotland.com/, 3rd August, 2013). As one of Scotland's premier adventure tourism providers, this figure demonstrates the significance of 'last great wilderness' imagery to Scotland's identity, with nature-based tourism alone estimated to be worth £1.4 billion to Scotland's economy (HIE, 1996; SNH, 2010; Scottish Parliamentary debate, 2013). Wildland is of great significance to both Scotland's natural and cultural heritage.*

3.2. 'Unwilding Scotland'

Beyond such romanticism, the Scottish uplands in general, and the Highlands in particular, are far from this mythic ideal. These upland environments have a long and complex environmental history, from both a climatic and human perspective (Ballantyne *et al.*, 1997; 1998; Smout, 2005; Brown *et al.*, 2011). Indeed, teasing apart the intricacies of natural environmental change and human-induced change continues to perplex academics (Brown, 1997; Smout, 2000). But it is clear that when humans arrived in this 'pristine wilderness' it was a forested land, rich in Scots pine, willow, rowan, bogs and mammalian fauna (Edwards & Whittington, 1997). Despite its harsh conditions for human occupation, *Homo sapiens* has lived in Scotland throughout post-glacial time, with a permanent population of hunter-gatherers from at least 9,000 BP (Hirons & Edwards, 1990; Ritchie & Ritchie, 1997). Although early Mesolithic settlers were arguably too technologically primitive to significantly impact the environment they inhabited (Goudie, 2005), developments in agricultural and technology 6,500 years ago were coupled with the onset of environmental degradation (Smout, 1997; 2000). As Neolithic settlers began subsistence farming with grazing animals, Scotland's temperate vegetation began to suffer substantial losses (Tipping, 1997; Goudie, 2005; Featherstone, 2010). It is estimated that by the Iron Age, 500 BC, approximately half of Scotland's natural woodland had disappeared (Fisher, 2003). Between the Neolithic and Medieval times, Britain lost three of its five ungulate species (Hancock *et al.*, 2010).

This trend of environmental change continued through the Highland Clearances in the 18th and early 19th centuries, when many Highland communities were forcibly displaced from the land to make way for industrial numbers of sheep (Smout, 1993; Lister-Kaye, 1994; Richards, 2000). Since the last Ice Age, as a consequence of on-going habitat loss and persecution by hunting, Scotland has lost a significant number of its native mammalian fauna (Table 3.1). Within mere moments in evolutionary time, Scotland's landscape changed irrevocably as the landscape was tamed and 'unwilded'.

Species	Date of Extinction	Probable Causes of Extinction
Elk	< 4,000 BP	Hunting; Habitat Loss
Auroch	~ 2,000 BP (?)	Hunting; Habitat Loss
Lynx	< 1,800 BP	Hunting; Persecution; Habitat Loss
Brown Bear	10th Century (?)	Hunting; Persecution; Habitat Loss
Crane	< 15th Century (?)	Habitat Loss; Hunting
White Stork	15th Century	Habitat Loss
Beaver	16th Century	Hunting; Habitat Loss
Great Bustard	16th Century	Habitat Loss; Hunting
Wild Boar	17th Century (?)	Hunting; Habitat Loss
Wolf	17th Century	Hunting; Persecution; Habitat Loss
Capercaillie	18th Century	Habitat Loss; Hunting
Great Auk	19th Century	Habitat Loss; Hunting
Bittern	19th Century	Habitat Loss; Hunting
Red Squirrel	19th Century (?)	Habitat Loss
Great Spotted Woodpecker	19th Century	Habitat Loss; Hunting
Red Kite	20th Century	Persecution
Goshawk	20th Century	Persecution
Spotted Crake	20th Century	Habitat Loss
Polecat	20th Century	Persecution
Osprey	20th Century	Persecution
Sea Eagle	20th Century	Persecution

***Table 3.1**: Scottish faunal extinctions during the Holocene from Brown et al., (2011). Question marks signpost dates over which there is particular uncertainty. For a detailed species history in Scotland see Kitchener & Lambert (1998), Yalden (1999), Hetherington et al. (2005).*

"A fast forward history of land-use in the Highlands should be accompanied by a pibroch lament" (Lister-Kaye, 1994:8) because the latter part of the 19th century was no

more favourable for the natural environment. As the aristocracy followed Queen Victoria and Prince Albert in pursuit of sporting opportunity, the landscape was subject to another round of species extirpations, including the demise of ospreys, pine martens and wildcat, for example (Taylor, 2005; Warren, 2009a). Coined 'Balmoralisation', the rising popularity in deer stalking resulted in the development of the large Highland sporting estate (Wigan, 1991; Lister-Kaye, 1994; Samuel, 2000; Wightman, 2004), facilitated by declining livestock prices leading to the availability of large tracts of relatively cheap land (MacMillan & Leitch, 2008). With the sporting estate came increased deer numbers and the practice of muir-burn[2] on grouse moors, both of which maintained the unnatural dearth of trees (Cramb, 1998). Over this long human history, therefore, Scotland metamorphosed from a living forested ecosystem with thriving species abundance to the more treeless landscape of today which Darling (1955) described as 'wet desert'. At present Caledonian pinewood occupies approximately 2% of its native historic range, which pollen analysis suggests would have covered 70-80% of the country at its maximum ~5,000-6,500 years BP (Scottish Forestry Forum, 2002; Featherstone, 2010). Although it is widely accepted that Scotland's uplands exhibit a degraded ecology (Warren, 2009a; Sandom *et al.*, 2013b) the extent and nature of its postglacial woodland is heavily debated (see Breeze, 1997; Fenton, 2008; Tipping, 1997; 2008). Darling's (1955) maligned wasteland interpretation is widely criticised as being too dramatic (Smout, 1993; Rotherham, 2013b). Although Fenton's (1997) alternative, iconoclastic view is more in line with Darling, environmental historians generally agree that climatic change has had a significant role to play in the disappearance of Scotland's trees (Smout, 2000). On these grounds, Smout (1999) criticises the use of oversimplified forest histories to justify a woodland creation emphasis (Section 3.5.1).

3.3. Scotland's uplands today

3.3.1. A contested landscape

Today, virtually all of the uplands are "managed as multifunctional, cultural landscapes, kept in an 'open state' by practices such as grazing, cutting and burning" (Glass *et al.*, 2013a:32). Three main land uses of the past 150 years (sheep farming, forestry and game management) endure in shaping these landscapes today (Bonn *et al.*, 2009). The uplands continue, therefore, to support a rural economy, providing livelihoods, resources and services to local people and visitors (SNH, 2003a; 2003b; Reed *et al.*, 2009; Glass *et al.*, 2013b). They are subject to relatively intensive management practices (e.g. muir-burn), many of which are considered to retain Scotland in a

[2] A commonly employed upland practice involving the burning of heather to encourage new shoots in nutrient depleted soils where regeneration is slow. Roberston *et al*. (2001) discuss the role of red grouse management in relation to the loss of heather in the uplands.

simplified state of ecological arrest (Thirgood *et al.,* 2000; van der Wal *et al.,* 2011).[3] Like elsewhere in Europe, Scotland has a strong agricultural connection (Warren, 2009a), but, environmentally, upland farming has been under fire for some time now. Monbiot (2013b), for instance, suggests that the Single Farm Payment System is perfectly designed for 'maximum ecological destruction' as farmers receive payments for maintaining 'good agricultural and environmental condition', which he suggests is about preventing, rather than promoting, natural regeneration of wild plants. The 'Highland sporting estate'[4] is widely cited as a principal agent of environmental degradation given its propensity to retain red deer numbers artificially higher than natural carrying capacity, thereby prohibiting forest recovery (Bullock, 1999; Wightman, 2004; Dudley, 2011; Irvine, 2011). With red deer numbers under particular scrutiny of late (MacMillan & Leitch, 2008; Putman *et al.*, 2005; 2011), discussion over their future management is very topical at present (Watson, 2007; Rose, 2010). In recent years, particularly since the Land Reform (Scotland) Act (2003), a new land-use has entered centre stage with the rise of the 'conservation estate' (Warren, 2002a; McMorran & Glass, 2013). With different aims from traditional estate aspirations (particularly in relation to deer numbers (Johnston, 2000)), charitable conservation organisations (notably NTS, JMT and RSPB) and public bodies have become significant landowners in a bid to protect the environment in perpetuity and, in some instances, to embark upon large-scale restoration projects (Chenevvix-Trench & Philip, 2001; Croft, 2004; Taylor, 2007; Warren, 2009a; Glass *et al.,* 2013a). Some sizeable privately owned estates have become part of this trend too as motivations for ownership have diversified (e.g. The Corrour Trust, 2010).

Scotland's uplands therefore have a complex political ecology. They are contested places in which debates over the relative value of agriculture, crofting, forestry, field sports and nature conservation have been, and remain, protracted and combative (McIntosh *et al.*, 1994; MacDonald, 1998; SNH, 2002c; Wightman, 2004; Irvine, 2011). Furthermore, management policies have been sectoral and myopic resulting in "entrenched positions" in land-use debates (Thirgood & Redpath, 2008: 1152; Thompson *et al.,* 2005). Conservationists are accused of attempting to sterilise development (Ramsay, 1996; Midgely, 2003; Toogood, 2003), while developers are criticised for narrow-sightedness and undervaluing what is at stake (Warren, 2002b). However, in reality debates are rarely as black and white as some polarised positions suggest. With synergistic relationships between traditional practices and conservation values, for example, the 'conservation landscape' is not always wholly discernible from the 'traditionally managed landscape' (Adams, 2012). Some cherished conservation landscapes are heavily manipulated to retain high biodiversity and multiple socio-economic benefits (Budiansky, 1995; Smith, 2009). In fact, seeing as many rural grant

[3] However, the heather moorland cultural landscape is considered to be of international significance (van der Wal *et al.,* 2011).

[4] See Wigan (1991) and McKee *et al.,* (2013) for more detail on the nature and history of Highland sporting estates.

systems encourage the adoption of management approaches which are in line with conservation objectives, most sporting estates can lay claim to some conservation objective or another (Adams, 2012). But habitats which have resulted from human management (e.g. grazing livestock) have always been important to UK conservation (Wood, 2002). While there is a concern that this injects confusion into conservation policy by pretending manmade features are somehow 'natural' to legitimise their protection (Henderson, 1992), in actual fact it sits well with Scottish conservation's strong 'people and nature' mantra (Adams, 2003; Maxwell & Birnie, 2005; Scottish Executive, 2007). Given Scotland's distinct history, landowner context and land-based economy, it has long been recognised that conservation needs to co-exist with other objectives as part of integrated, multifunctional land use (Glass *et al.,* 2013a).[5]

3.3.2. A cultural landscape

Therefore, while Scotland may look wild and natural, commentators are quick to point out that it is not an untouched wilderness (Hunter, 2000; Dudley, 2011). With a history of human influence dating back to the end of the last ice age some 12,000 years ago, Scotland is a palimpsest landscape with a pervasive human history (Habron, 1998b). It has been deforested, burnt and grazed, had non-native species introduced and seen wild species domesticated (Ratcliffe & Thompson, 1988; Peterken, 1996; Taylor, 2005). Historic remnants are visible today in the form of hill forts, cairns, old field-systems and abandoned shielings, and in a few thousand years-time, perhaps contemporary practices like renewable energy infrastructure will be labelled the signature of today's contribution to these profoundly altered landscapes (Wrightham & Kempe, 2007).

Scotland is a cultural landscape, a record of successive human socio-economic regimes fashioned by environmental and anthropogenic forces over long time scales (Warren, 2009; Oram, 2009; Robbins & Fraser, 2003; Dodgshon & Olsson, 2004; Brooker, 2011). Nonetheless, it has retained a strong sense of wildness, a quality which in some ways was reinstated by the forced evictions of the infamous Clearances and a largely feudal land tenure in which humans were excluded and replaced by sheep (Hunter, 1995; Carver *et al.,* 2002; Warren, 2009b). Scotland's uplands are, unambiguously therefore, 'secondary wilderness', reinstated after a long history of use, abandonment and reuse. Therefore, a human history is traceable in even the wildest parts of Scotland, but in these areas the cultural inheritance is only a light imprint and not deemed sufficient to compromise its wildness (SNH, 2002b). However, regardless of its origins, it is argued by some that Scotland provides a "particularly potent example of land in need of ecological restoration", and is a context in which rewilding could have significant relevance (Featherstone, 1997:48; Brown *et al.,* 2011).

[5] For a more thorough overview of sustainability issues in the uplands, see Scottish Executive (2006) and Glass *et al.* (2013b).

3.4. Wild land in Scotland: history, definition and policy

While historically 'wilderness' has not had the same ideological and cultural significance in Scotland as in America (Fisher *et al.,* 2010), the same shifts in nature-human relationships detailed in Chapter 2 have occurred in Scotland (Smout, 1993). The foundations for current attitudes towards rural landscapes were, therefore, laid during the Romantic revolution of the 19th century (Olwig, 1984; McMorran *et al.*, 2006). Then, with increasing industrialisation, the growth of outdoor recreation and a series of 20th century threats to wildness (Table 3.2), ideas of protecting wildland grew (Aitken *et al*, 1992).

Wildland Threats	
i.	***Hydroelectric development***: rapid expansion in hydroelectric developments in Scotland's remoter areas from the 1940s – 1960s
ii.	***Afforestation***: extensive wave of afforestation in unsympathetic landscape surroundings in post-war Scotland
iii.	***Bulldozed tracks***: increase in poorly constructed, high altitude roads on privates during the late 1960s
iv.	***Recreational accessibility***: improvements in public road networks and popularisation of outdoor recreation
v.	***Ungulate mouths***: overgrazing by deer and sheep stunting the recovery of a more diverse vegetation cover
vi.	***Localised impacts***: individual ski-developments, helitourism, military upland use

Table 3.2*: The main threats to the wild quality of the uplands which contributed to the rise of the wildland concept (SNH, 2002b).*

An early landmark in the rise of Scotland's contemporary wildland discourse was the National Trust for Scotland's (NTS) establishment of its early management principles based upon the direction of Percy Unna, a key benefactor of the Trust (NTS, 2002). The 'Unna Principles' focus on protecting the wild sense of primitivism by limiting facilities (e.g. way-marking or paths) which might make mountains easier, and safer, to climb (NTS, 2002). They therefore symbolised the beginning of an explicit recognition of the value of the wildest parts of the Highlands (Aitken, 1977). A number of high profile challenges to development then put wildland in the political frame, most notably the Lurcher's Gully inquiry of 1982 concerning the potential expansion of the Cairngorms Ski Area (Watson, 1991) and the John Muir Trust's (JMT) Knoydart purchase in 1983 amidst Ministry of Defence plans to use it as a bombing range (McMorran *et al.,* 2006). Recognising the vulnerability of wild land to mis-management and the threat of continued development – most notably bulldozed estate tracks - bodies such as the Scottish Wild Land Group (SWLG) and the Mountaineering Council of Scotland

(MCofS) began lobbying for the protection of wild places (Samuel, 2000; SWLG, 2002; McMorran *et al.,* 2006).

Despite a long history of concern for Scotland's wild places, it was not until the publication of National Planning Policy Guidelines 14 (NPPG14) – the Scottish Government's strongest constitutional policy for wild land - in 1999 that wild land gained formal recognition at a government level (McMorran *et al.,* 2006). This planning guidance document states that landscapes of wild character should be safeguarded from insensitive planning operations (Scottish Executive, 1999). However, it has been routinely accused of being weak and providing little clarity in terms of the criteria for defining and identifying wild land (2011b; Fisher, 2011).[6] In 2002, SNH then published a policy statement on wildness, recognising its recreational values and potential for nature, and asserting that such areas should be safeguarded against inappropriate development and land-use change (SNH, 2002b). The NGO sector followed suit, formulating a number of organisation-specific wildland policies (Table 3.3) which, despite being concerned with management of their own land, also include recommendations for national policy (McMorran *et al.,* 2006). Nevertheless, the policy debate on wild land continues apace today with a recent parliamentary debate over its protection (Scottish Parliamentary debate, 2013) and a mounting campaign for statutory protection of wild land as pressures on these fragile landscapes continue unabated (JMT, 2013). Defining the spatial extent of wild places has long been considered critical to their future protection (e.g. Linton, 1968; Aitken, 1977; Habron, 1998b), and at present there is a particularly strong emphasis on mapping this resource (Carver *et al.,* 2002; Carver *et al.,* 2008). SNH's (2014) recent publication of a 'Map of Wild Land Areas' is a significant development on this point (see Appendix I). Incorporating the more perceptual, endogenous parameters of wildland is also increasingly considered important, as SNH's recent commissioning of a study into wild land perceptions suggests (Wilson-Smith *et al.,* 2012).[7]

[6] Furthermore, it is only a guidance document and therefore has no legal force, thereby placing the onus on local planning policy at a regional and local level.

[7] See McMorran et al. (2006) and Fisher (2011) for a detailed overview of future wildland policy options, particularly in relation to renewable energies (one of the greatest threats to wildland) and Scotland's nature conservation agenda (e.g. the potential for making wildness more relevant to existing protected area designations or National Park Planning Policy).

Organisation	*Definition*
SNH (2002b:8)	'parts of Scotland where the wild character of the landscape, its related recreational value and potential for nature are such that these areas should be safeguarded against inappropriate development or land use change'
NTS (2002:4)	'relatively remote and inaccessible, not noticeably affected by contemporary human activity, and offers high quality opportunities to escape from the pressures of everyday living and find physical and spiritual refreshment'
Scottish Government NPPG14 (1999)	'uninhabited and often relatively inaccessible countryside where the influence of human activity on the character and quality of the environment has been minimal'
JMT (2004)	'uninhabited land containing minimal evidence of human activity'

***Table 3.3**: Definitions of wild land in Scotland proposed by organisations and the government. In the policy domain there is reasonable consensus over the meaning of 'wildland', with the absence of perceived human influence being particularly significant. However, beyond this simple interpretation it is a complex, multi-faceted concept.*

Like wilderness, wild land evades simple definition (Aitken, 1999; McMorran *et al.*, 2008). For SNH (2002b) its critical attributes are (i) a high degree of perceived naturalness[8], (ii) lack of modern artefacts and structures, (iii) little evidence of contemporary human uses of the land, (iv) land which is rugged or physically challenging and (v) remoteness and inaccessibility. Beyond these more physical attributes, the perception of wildness is important, and is recognised as being influenced by issues like land cover, management practices and cultural history of the area (Wrightham, 2002; SNH, 2008). There are therefore some frames of reference which focus on the attributes of wild places (e.g. remoteness, human artefacts etc.) and others which focus on perception and experience (e.g. degree of solitude or challenge). Accordingly, these attribute and perceptual frames are generally differentiated using the terms 'wildland' and 'wildness', where wildness is the quality being experienced and wild land is those places where "wildness is best expressed" (SNH, 2002b:2). Recognising that the conceptual and spatial definition of wildland remains a key challenge, McMorran *et al.* (2008) propose a number of axes and criteria for a typology

[8] SNH (2002b) detail how 'perceived naturalness', rather than simply 'naturalness', encapsulates the idea that to visitors who are unfamiliar with the ecological history of the uplands, they may appear more pristine than they are in reality.

for landscapes of wild character which provide useful insight into how wildland is conceived in Scotland (Table 3.4) (see McMorran *et al.* 2006; 2008 for detail).

Axes and criteria for a proposed typology of Scottish landscapes of wild character
Axis 1 – Remoteness • Distance from settlements and public roads (3, 5 and 8 km categories) • Limited accessibility (by lack of roads, scale or difficulty in passage)
Axis 2 – Perceived naturalness – of vegetation, land use and wildlife • Vegetation cover mainly composed of functioning semi-natural or near-natural habitats • Presence of ecotonal habitats and habitats undergoing natural succession, and natural treelines • Habitat management/ecological restoration work could also be seen as a short term detractor depending on intensity (e.g. extensive tree planting) • Intensive land use (improved grassland/crops etc.) should not be present. Plantation forestry should either not be present or be of limited impact • Range grazing, field sports and public recreation can occur without being significant detractors – but could act as detractors dependent on intensity (e.g. severe footpath erosion, large areas of visible overgrazing) • Presence of domestic stock considered a mild detractor; presence of large raptors as an enhancer
Axis 3 – Degree of human artefacts • Density and number of built developments (buildings/telecommunications) • Visible deer fencing and bulldozed roads • Impact from outside the area (windfarms, visual, noise and light pollution) • Level of path erosion visible in the area
Axis 4 – Scale • An area sufficient to provide visitors with physical challenge and engender a sense of remoteness • Striking topographic features or rugged terrain seen as an enhancer • Areas of prime wild landscape should be at least 2000 ha • Landscapes of wild character (not wildland) can occur at a smaller scale to a minimum of250 ha

Table 3.4: *McMorran et al's (2008) typology of wildland in Scotland. The four axes are broadly accepted as being the main qualities which define Scottish wildland.*

Perhaps the most important defining characteristic of 'wild land' is the fact that it is *not* 'wilderness'. The concept of wild land is peculiarly Scottish (Price *et al.,* 2002). While the North American wilderness movement has unquestionably provided the stimulus for wildland consciousness in Scotland (Aitken *et al.,* 1992; McMorran *et al.,* 2006), the concepts and values of the US Wilderness Act have always been significantly harder to apply to Europe which is generally more crowded and industrialised (Mackay, 2002; Carver, 2007; SWLG, 2010). Wilderness is a term "best avoided in Scotland because it implies a more pristine setting than we can ever experience in our countryside, where most wild land shows some effects from past human use" (SNH, 2002b:6; McMorran, 2007). But despite not qualifying against international standards of wilderness, the fact that remoter parts of this rugged country evoke a sense of wildness is important (SNH, 2002b; Warren, 2009a). For this reason, since the 1970s onwards, 'wild land' and 'wildness' have been used to acknowledge the fact that these cultural landscapes have retained some of their wild quality (Aitken, 1977; Habron, 1998a; McMorran *et al.*, 2008). Wild land, therefore, encapsulates notions of *relatively* unmodified nature, thereby recognising that the Scottish environment is more modified than many international wildernesses (SNH, 2003a; Carver, *et al.*, 2002; McMorran, 2007). The term wild land has several advantages over 'wilderness' in that it: [9]

(i) avoids entrenched connotations of 'pristine'
(ii) is more spatially neutral (i.e. an area can exhibit wild quality without being designated a wilderness area)
(iii) helps to overcome the fact that 'wilderness' retains the pejorative connotation of being a wasteland
(iv) is not founded upon a dichotomy between humans and nature (Aitken *et al.*, 1992; Powell *et al.,* 2005; Warren, 2000b), making it easier to reconcile with Scotland's dominant sustainable conservation paradigm

Given its position as a pragmatic alternative to wilderness, Scotland's wild land framing places a significant amount of emphasis on landscape character, as opposed to a purist, ecologically untrammelled wilderness conception. With its recreational roots, it is strongly landscape and planning-oriented, focussing much attention on the 'wilderness experience' (see NTS, 2002), rather than an explicit nature conservation or biodiversity focus. Given the history of "evaluating the Highland landscape along strictly aesthetic lines" in Scottish conservation, the inherently landscape oriented philosophical infrastructure of wildland is expected (MacDonald, 1998:241). However, more recently this emphasis on recreational and cultural values has been accused of obscuring the need to restore the simplified ecology of the uplands (Fisher, 2011). Given that "cultural considerations predominate over ecological ones", the importance of natural integrity is not built into Scotlands wildland framing (Fisher, 2011:3). Recently therefore,

[9] See Fenton (1996) for a detailed discussion of the differences between 'wild land' and 'wilderness'.

discussion about incorporating ecological principles and making linkages between wildland and biodiversity has developed.

3.5. Rewilding Scotland: an emergent conservation paradigm

Scottish conservation has historically embodied the target-driven, defensive nature reserve approach detailed in Chapter 2. It has been driven by "diversity, historicism, and a concern for favoured species" (Henderson, 1992:394). Averting loss and preventing change have been its most axiomatic principles (Evans, 1992; Adams, 1996). Consequently, a strongly interventionist, management-oriented approach has characterised British conservation (Adams, 2003; Colston, 2003),[10] which previously lead to it being labelled "the most unnatural conservation policy possible" (Henderson, 1992: 397). But recently, this 'nature reserve' approach has been extensively criticised for being reactionary and ineffective at preventing further species loss (Lawton *et al.*, 2010; Monbiot, 2013a; Rotherham, 2014). As part of a global movement, Scottish conservation is, therefore, making a step change towards a widespread adoption of habitat creation which ultimately aims to rebuild nature and create a more resilient environment (Lawton *et al.*, 2010).

Accordingly, despite its landscape and recreation roots of the wild land concept in Scotland (Mackay, 2002), its value beyond aesthetics, tourism and national identity is increasingly discussed. Rather than a romantic descriptor, 'wild land' is beginning to be spoken about in a strategic, ecological sense. As Scotland's Biodiversity Strategy (Scottish Executive, 2004) underscores the importance of ecosystem-scale threats to biodiversity (e.g. habitat fragmentation and truncated natural processes), the potential for synergies between nature conservation and the protection of wild land are being recognised. Aspirations to restore, expand and enhance Scotland's wild places by returning missing components and processes are more readily discussed as ideas of 'rewilding' grow. 'Restoring wildness' is increasingly an objective on Scotland's upland management agenda (Taylor, 2011).[11]

3.5.1. <u>The rewilding story so far</u>

Some would argue that there's been a rewilding movement in Britain since the 1980s (e.g. with the establishment of Trees for Life (TfL) in Affric (Taylor, 2011)). However, its ambit has increased significantly in the past two decades as commitment to reversing

[10] Manipulative conservation gained particular ascendency in Scottish conservation as designations, such as SSSI's, became increasingly maintstream (Midgley, 2007).

[11] The fact that Sutherland *et al.* (2006) identify the 'consequences of wilding' as part of their top 100 questions with high policy relevance currently is testifies to the growing significance of wildness on the UK conservation agenda.

landscape simplification is particularly associated with 21st Century environmental NGO land purchases and the rise of what Adams (2012:28) calls the 'Private Estate Conservation Landscape'. As a consequence of these changing ownership motivations, some of Scotland's large land-holdings are "currently debating management policies in light of rewilding issues such as the removal of bulldozed tracks, deer culling, removal of alien conifers, sustainable forest use and the degree of management for traditional sports" (Taylor, 2005:5). To date, on the ground change has been subtle by international standards, with the greatest 'rewilding emphasis' reserved for landscape restoration (e.g. restoring the scars of unsympathetically developed hill tracks in wild landscapes (Wrightham, 2002)). But beyond this distinct landscape emphasis, there is significant political and social drive to restore the degraded ecology of the uplands, resulting in significant growth in the number of partnership management approaches in Scotland today (McMorran & Glass, 2013). Scotland's rewilding initiatives are therefore significantly more than academic debate; perhaps the most revolutionary component of this recent commitment to wild land is the fact that it is an independent set of initiatives associated with practical projects (Carver & Samson, 2004; Featherstone, 2004; Ethos, 2008; Brown *et al.*, 2011). With high-profile projects such as Alladale, in Sutherland, owned by the radical philanthropist Paul Lister causing a significant stir, the idea of rewilding is gaining attention (Sidaway, 2006). Table 3.5 introduces some of the key individuals and organisations propelling this new paradigm. For the most comprehensive review of Scotland's rewilding projects see Taylor (2011) and Ward *et al.* (2006). With one of the most concentrated private land ownership patterns in Europe (Wightman, 1996; Lorimer, 2000), government alone cannot generate environmental resilience without the positive engagement of a range of landowners (Lawton *et al.*, 2010). The independent nature of Scotland's rewilding trials is, therefore, significant.

Key players in Scotland's rewilding movement	
Alladale Estate (See Atkinson, 2007; Edward, 2008)	• Plans to create a 23,000 ha fenced wilderness reserve in the Northern Highlands where wolves, bear, wild-boar, lynx, moose, beaver and other formerly native species will roam • Arguably Scotland's most ambitious and contentious rewilding vision • Restoring hunting estate to its original ecology • Safari-style approach based on South African game reserve model
Trees for Life (TfL) (see Featherstone, 2004)	• Arguably Scotland's most high-profile rewilding organisation • Beginning with a series of fenced off areas of naturally regenerating seedlings in 1989, TfL now has an extensive planting programme • Aims to restore 600-700 mile^2 of Caledonian pinewood to Glen Affric with no economic activity • 250 year vision for a large core reserve of self-sustaining wildland • Currently working hard to regenerate an aspen stand around Loch Beinn A'Mheadhoin (Affric) in anticipation of a successful beaver trial outcome ***(Continued…..)***

Key players in Scotland's rewilding movement	
The John Muir Trust (JMT) (see JMT, 2010b)	• Aims to safeguard the future of wildlands against development and to promote awareness of their value • Significantly raising the public profile of rewilding • Rewilding its own properties by improving habitats & encouraging a more natural landscape and ecosystem
Scottish Natural Heritage (SNH) (see Ramsay, 1996; Newton *et al.*, 2001)	• Significant woodland restoration on its larger reserves • Pioneering approaches to fencing and deer control at Beinn Eighe • Pioneering approaches to regeneration in the absence of fencing at Creag Meagaidh • Policy and guidelines on issues such as reintroductions
Abernethy (RSPB) (see Hancock *et al.* 2010)	• Owns a large remnant of Caledonian pine (4,000 ha) and a large area of open heathland • Restoring natural treeline and natural character of woodland • Pioneers of non-intervention management approach and more recently some more technical management approaches
Mar Lodge Estate, National Trust For Scotland (NTS) (see Holden & Clunas, 2008)	• Focussed on landscape-scale management and favouring natural processes • High profile landscape restoration of the Bheinn a'Bhuird track and emphasis on footpath management to reduce further erosion • Removing redundant fencing and extensive deer control to promote natural regeneration • Bringing contemporary upland management in line with the protection of wild quality
The Carrifran Wildwood Project (see Ashmole & Ashmole, 2009)	• Smaller scale ecological restoration in the Scottish Borders • Recreating a forested tract of land • An extensive volunteering programme • Given its scale, the reintroduction of predators of large herbivores is not anticipated here
Wildland Ltd. (see Ross, 2013; Macaskill, 2014)	• Aims to create a vast uninterrupted wilderness by expanding an already sizeable property portfolio worth over £65m • Extensive deer control to promote regeneration of native woodland and associated indigenous species like black grouse and capercaillie

Table 3.5*: The organisations currently associated with the growing rewilding movement in Scotland, all of which are landowners and trialling their own interpretations of rewilding in various areas of Scotland's uplands. It is worth noting that while the expression wildland or rewilding 'movement' is used as a shorthand throughout this thesis, it practice, it is a divergent set of initiatives as opposed to a movement in any strategic sense.*

But while the inspiring awe of the Highlands makes the concept of rewilding relatively intuitive to understand in Scotland, the concept actually defining it remains elusive (Jeeves, 2006). Despite quite considerable discussion about individual rewilding projects and their components (Ward *et al.*, 2006), discussion around the concept itself

in Scotland is scant. Carver (2007) and Jeeves (2006) make the most comprehensive efforts to delineate rewilding in a UK context, broadly associating it with ideas of restoring woodland, allowing natural processes to function and people interfering as little as possible (Ashmole & Chalmers, 2004; 2008). As explored in Chapter 2, therefore, rewilding in Scotland loosely describes ideas of whole ecosystem restoration which re-establishes "natural climax vegetation and fauna that would characterise a 'wilderness' where the effects of man are minimal" (Taylor, 1995b:22;).

Reintroducing species was described as a critical rewilding practice in Chapter 2. This is not a completely new idea in Scotland. Although purely for game sport, as long ago as 1837 Capercaillie (*Tetrao urogallus*) were reintroduced (Petty, 2000), and more recently, between 1975-1977, the white-tailed sea eagle (*Haliaeetus albicilla*) was successfully reinstated (Love & Ball, 1979). Other species, such as the osprey have successfully re-established themselves unaided (*Pandion haliaetus*) (Lambert, 2011) (Fig.3.2). However, in the past decade consideration of reintroducing larger mammals has developed (e.g. see MacDonald *et al.*, 1995; South *et al.*, 2000; Wilson, 2004; Gray, 2010). The European beaver (*Castor fiber*) has received greatest attention given the comprehensive trial at Knapdale, Argyll (SBT, 2007) and the wild population which has become established in the Tay Catchment as a result of escapees or illegal releases from private collections (Campbell *et al.*, 2012). While carnivore reintroductions stir the greatest amount of controversy, the potential for the return of predators to solve Scotland's deer crisis by controlling population (Nilsen *et al.*, 2007), affecting deer movement and grazing patterns ('landscape of fear', see Laundré *et al.*, 2001) is a commonly cited promise of their reintroduction. Despite challenges to the idea that wolves could absolve the need for human control (Goreman, 2007), it is generally accepted that resistance to their return is cultural, social and economic as opposed to ecological (Featherstone, 1997). The lynx (*Lynx lynx*) is a more likely candidate (Hetherington, 2006; Hetherington *et al.*, 2008), although still controversial (Carver, 2008; Cooke, 2012).[12]

[12] Regardless of this public anxiety, under Article 22 of the EC Species and Habitats Directive (EC92/43), there is a legal requirement to consider the reintroduction of lost species (see Rees, 2001).

Figure 3.2*: The osprey, which re-established itself naturally in Scotland. Photo © Neil McIntyre*

In practice, the greatest headway in Scotland is associated with native woodland restoration. Particular attention is being paid to restoring the Caledonian pinewoods, dubbed the 'Great wild wood of Caledon', back to its native extent (Humphrey *et al.*, 2000; Hobbs, 2009; Featherstone, 2010).[13] Significant native woodland planting schemes have developed, focusing on the recovery not just of pine (Fig.3.3), but other saplings such as juniper, willow, birch and rowan too. Because trees are unable to regenerate under historic browsing and trampling pressures, reducing grazing pressure through deer culling is considered critical (Mitchell & Kirby, 1990; Andrews *et al.*, 2000; Scott *et al.*, 2000; Rose, 2010). [14] This has caused quite a media storm as these kinds of conservation efforts have been perceived as a barbaric massacre by much of the animal loving general public and by neighbouring estates who believe retaining high deer numbers is vital to retaining their sporting value (Windmill *et al.*, 2011).

[13] It should be noted that significant headway has been made with peatlands restoration in the far north of Scotland too, but this is seemigly less under the aegis of 'rewilding' (see RSPB, 2010b).

[14]Putman *et al.* (2011) explore the thresholds for deer populations if natural regeneration is to be achieved.

Figure 3.3*: Native pine seedling. Photo © Neil McIntyre.*

3.5.2. Scotland's rewilding drivers

While there is limited empirical information concerning the social, environmental and economic benefits of wild land, its broad value is increasingly recognised. McMorran *et al.* (2006) and Taylor (2006) provide the most comprehensive outline of the opportunities associated with wild land and provide some insight into the drivers behind Scotland's rewilding debate (Table 3.6).[15] However, in brief, it is apparent that land-use debates in Scotland have reached a critical point. Against the loss-making enterprises of field sports, the subsidy dependency of marginal agriculture[16] and a rapidly growing ecosystems services paradigm[17], the idea that wildland can present a competitive, sustainable land-use relative to traditional uses is gaining support (McMorran *et al.*, 2006; Taylor, 2007). For instance, Fisher (2011) argues that instead of paying subsides to farming on the assumption that its continued presence is desirable, subsides could be linked to the delivery of the public goods associated with wildland. The emergence of

[15] Taylor reviews the benefits of some of these projects in terms of their levels of employment. Reviewing the benefits in terms of jobs is complicated, because while in many cases Taylor (2007) argues that more jobs are created through rewilding initiatives than traditional management approaches, in many instances these positions are in a new skills sector, resulting in a local cultural and skills declines (e.g. where keepering skills are not needed – therefore Taylor points out that "these extra jobs may not contribute to the cultural well-being of an area" (Taylor, 2007:3).

[16] SAC (2008) provide detail of how CAP reforms, which lead to the decoupling of subsidy payments and production, has resulted in significant decline in the number of sheep in the uplands and therefore on the viability of sheep farming.

[17] 'Goods, values and services' are really in vogue in conservation at the moment, resulting in a shift away from conservation largely on the grounds of aesthetics alone (Carver, 2013).

Scotland's rewilding debate is timely as there has arguably never been a better time to consider the upland land-use alternatives, including the most radical (Taylor, 2005).

Positive wildland/rewilding drivers in Scotland		*Literature*
Environmental drivers	• Increasing human demands on the natural environment • Changing paradigms in ecology	See Chapter 2
Landscape drivers	• Declining trend in the extent and quality of undeveloped wild countryside (particularly significant in this respect is the drive for wind energy)	SNH (2002a)
Policy drivers	• Decline in sheep farming as the Single Farm Payment decoupled agricultural subsidies from levels of production (e.g. the end of per-head subsidies) • Scottish Land Reform Act strengthening access rights and instilling a stronger connection between people and wild land • Developments in the policy framing of wild land with the recent publication of SNH's Areas of Wild Land	Roberston (2004) Fisher (2011) Irvine (2011) SNH (2014)
Economic drivers	• Increasing proportion of rural economies are reliant on tourism, particularly nature –based tourism • Increasing recognition of the financial value of ecosystem services • Financial incentives for creating new woodlands for landowners • The decreasing viability of land-use alternatives in these marginal areas	Fisher (2004) Taylor (2007) Bonn *et al.* (2009)
Social drivers	• Increasing participation in outdoor recreation • Identity and national pride • Increasing discussion around the social benefits of woodlands in terms of health and well-being	MacMillan *et al.* (1998) FCS (2009)

Table 3.6*: The key drivers which go some way to explaining why ideas of rewilding are gaining pace on Scotland's land management agenda.*

3.6. Summary: a distinctly Scottish rewilding vision?

Chapter 2 explored how rewilding is intrinsically connected with wilderness ideology. However, wilderness ideology is laden with connotations which are considered inappropriate for Scotland's cultural landscapes. Given the importance of wild land to Scotland's land-based rural economy and the strong cultural dimension to conservation discourse, Scotland's wildland context is distinctly different from that in North America, with its established wilderness framework. But, Scottish conservation discourse has always differed significantly from that of North America where they have typically been more non-interventionist due to their purist conception of wilderness. "Nature conservation objectives in Britain and North America reveals striking differences in conservation purpose and in interpretation of what is natural" (Henderson, 1992:394). It is not necessarily surprising, therefore, that Scotland is developing its own place sensitive framework for understanding the value of wild places. However, while not surprising, it is perhaps significant. Given that rewilding is intuitively connected with ideas of wilderness, what are the implications of Scotland's particular wild land framing for interpretations of rewilding? What are the implications of its distinct historical and cultural relationships with wild places? In light of these particularities, North American rewilding narratives are unlikely to be directly 'translatable' into the Scottish context (or *vice versa*). There are arguably, therefore, some importamt differences to be teased out between Scottish wildland projects and archetypal North American rewilding conceptions and practices.

Consequently, in order to facilitate the development of a robust wildland strategy in Scotland, it is importantly to explore what rewilding might mean in the context of the distinctly pragmatic framing of wildland. This could have broader resonance for the conceptual foundations of rewilding discourses more generally; Chapter 2's implies, perhaps, that rewilding which aims to (re)create wild land rests on sounder foundations than that which tries to (re)create wilderness. However, while Scotland's 'wild land' concept is capable of overcoming many of the criticisms of wilderness ideology, it is not a panacea. Despite significant efforts over the past decade to define it (McMorran *et al.*, 2008), it remains a poorly constrained term, with its broad, multi-dimensional parameters being interpreted very differently in various contexts (SWLG, 2010). Accordingly, different (re)wilding initiatives are likely to have embarked upon different pathways towards a wilder Scotland which are aligned with their own core objectives and fundamentally different understandings of this guiding concept (Taylor, 2005). It is clear, therefore, that the land-owning and managing fraternity is of immense significance in the debates which frame wild land management and rewilding. Their decisions about forestry, wind energy infrastructure, deer management and ultimately *their* wild land values will shape the future (Adams, 2012). Consequently, this research sets out to explore practitioner visions for a wilder Scotland.

Chapter 4

Research methodology

4.1. Chapter aims

This chapter sets out to do the following;

- *Explain the theoretical and philosophical foundations of this research*
- *Present the mixed-method, triangulated research design*
- *Explain the adapted wildland Delphi model approach*
- *Critically review the methods employed*

4.1.1. Analytic strategy

As this research is grounded in 'real world enquiry', the discipline of geography is most appropriately positioned to frame it (Clifford and Valentine, 2003; Robson, 2002). The rewilding debate is rich in geographical themes, revolving around issues of place, space, identity, belonging and human-nature interactions (Casey, 2001; Lorimer & Driessen, 2012). As a unifying discipline, geographical enquiry embraces the range of philosophical knowledge positions needed to occupy the middle ground between natural and social sciences, the interface of ecology, environmental philosophy and sociology (Hall & Page, 2002; Harrison *et al*., 2004a; 2004b). With geographical foundations, this research adopts a blended epistemology, thereby accounting for the complex interactions associated with its mixed-method research design which moves iteratively between deductive, inductive and abductive reasoning. While on the ground change is a critical emphasis in this management-focused research, the socially constructed nature of conservation values and rewilding ideals (Demeritt, 2001) means that critical theory underpins the conceptual framing of this research (Bryman, 2012). This constructivist methodology is therefore premised on the idea that social interactions shape viewpoints, rather than being directly referenced to an external reality (Agger, 1991; Andrews, 2012).[1] Iterative research design is diagnostic of critical theory (Grbich, 2012), and is understood to be particularly effective at generating theories, as opposed to testing them. This research design was therefore conceived to provide a conceptual framework for evaluating, and exploring, ideas surrounding the place of 'wildness' in Scotland's land management discourse.

[1] This is equally as significant with respect to the researcher's situation, meaning that issues of positionality and reflexivity in research design were considered critical at all times (see Rose, 1997).

4.2. Research Design: an adapted Delphi model

Establishing an informed, and holistic, conceptual framework for understanding the complexity of the 'rewilding Scotland' debate necessitates learning lessons from existing 'rewilding' projects, practitioner perspective and insights from policy and environmental philosophy. It therefore requires a mixed method, trans-disciplinary approach (Bryman, 2012). Using experimental research design, this methodology therefore combines qualitative and quantitative techniques, allowing the relative merit and rigour of these respective approaches to be blended together (Mason, 1994; Flick *et al*., 2007). Consequently, this research is developed through a series of triangulated, internally validated phases (see Olsen, 2004).

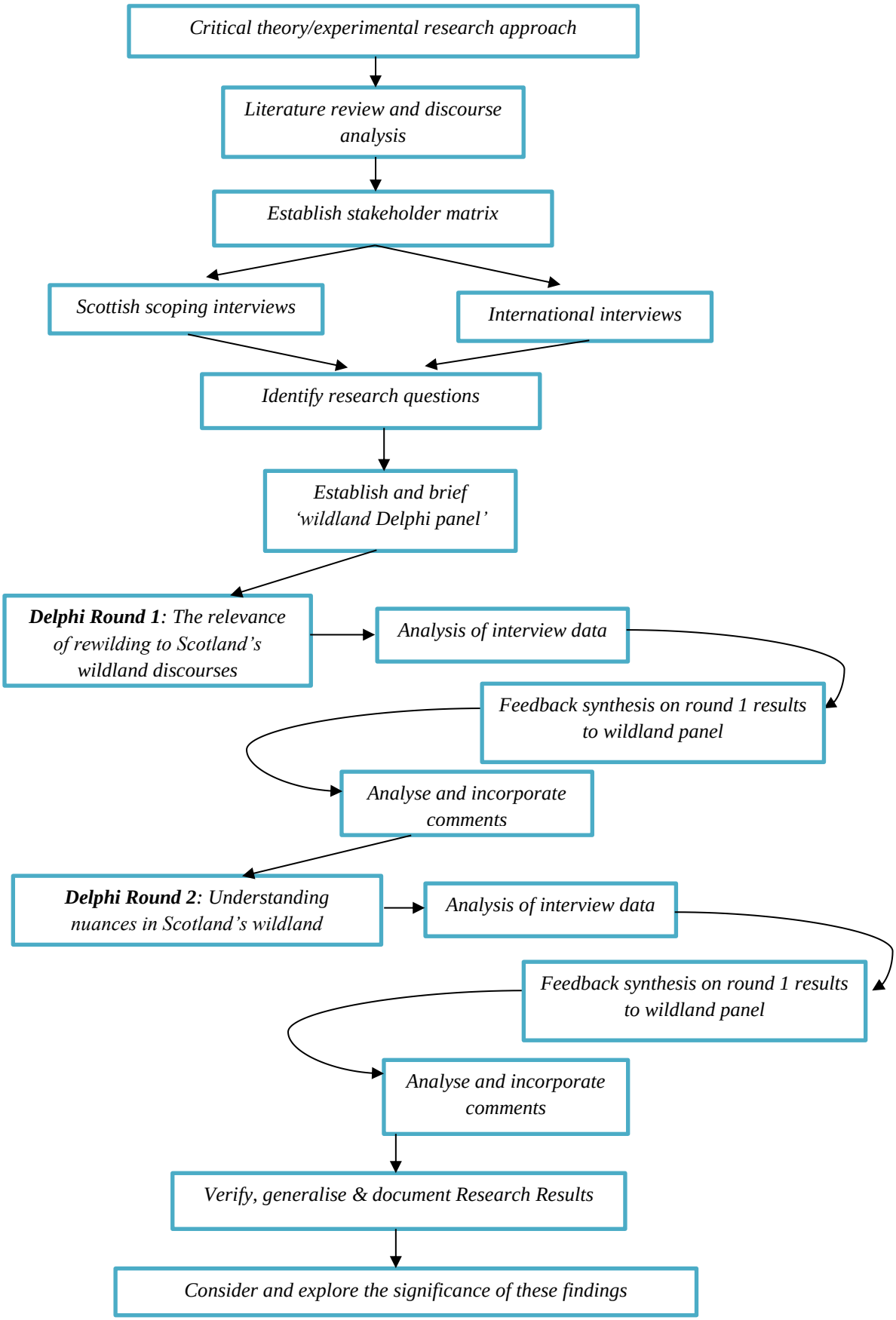
Phase	***Data set & method***	***Triangulation & continuity***	***Related aims and objectives***
Phase 1. Establishing the research context	Literature review and discourse analysis of policy documents	To identify gaps in contemporary debate and identify avenues of enquiry	To establish a rudimentary characterisation of rewilding discourses and associated ideologies
Phase 2. The international context of wilderness management	A series of 23 semi-structured interviews with key wilderness practitioners, policy advisers and academics in North America, New Zealand and Europe	To provide comparative conceptual framework for Scotland	To establish a normative context for rewilding discourses internationally and to consider the conceptual anchors of wilderness framing
Phase 3. Probing the fault lines in the 'rewilding Scotland' debate	A series of 20 semi-structured interviews with key stakeholders in Scotland's upland management sector	To provide the discussion themes for Delphi round 1, thereby ensuring their grounding in reality	To explore the conceptual paradoxes in the rewilding debate and the practical challenges associated with them
Phase 4. Understanding nuances in Scotland's wildland discourses	A fusion of two social research techniques (the Delphi method and Q-methodology) in an **adapted Delphi model** involving an 'expert panel' comprising 17 large rural land holdings in Scotland	• Delphi round 1: providing the concourse for Delphi round 2 (Q-methodology) • Delphi round 2: providing the foundations of a 'rewilding typology'	To understand how wilderness values can be reconciled with an ambiguous wildland context like that of Scotland.

Table 4.1*: The phases comprising this adapted Delphi model.*

As is evidenced in Table 4.1, this research methodology is successive, with each phase providing the foundations for the next. In the absence of any precise analytic technique appropriate for exploring subjective, multifaceted research questions - such as the 'wilderness' quandary - sequential phases can provide insight which is far greater than the sum of their parts (Patton, 2002). While each and every phase is imperative to constructing the whole picture, significant emphasis in the following chapters is placed on the results of Phase 4 as this represents the culmination of all prior phases. While this phase provides the main substance of this research, all results are the product of the triangulation between, and within, each and every phase to ensure validity of the end product.

This research design is summarised in Figure 4.1.

***Figure 4.1**: Adapted Delphi Model Design*



4.3. Critically Reviewing Methods

This section provides a critical overview of the Delphi technique and Q-methodology, thereby providing the foundations for Section 4.4, which introduces the adapted Delphi model designed to evaluate rewilding ambitions in Scotland.

4.3.1. The Delphi Perspective

The Delphi technique (simply termed 'Delphi') is a flexible and effective research method concerned with exchanging, and co-producing, knowledge and understanding (Glass *et al*, 2013c). It is fundamentally a structured communication technique which provides a deliberative space for traversing complex conceptual terrain (Linstone & Turoff, 1975; Glass *et al*., 2013c). Through an iterative procedure it collects, and distils, the anonymous judgements of a number of experts who collectively form a panel.[2] This 'panel of experts' remain at the core of the research process from start to finish as, over a series of iterative 'rounds' each member is required to complete a number of questionnaires/interviews whereby "each subsequent questionnaire [interview] is developed based on the results of the previous questionnaire [interview]" (Skulmoski *et al*., 2007:2). As facilitator, the researcher collects these responses and compiles a feedback summary of the key points. Participants are asked to revise their responses in light of this feedback, and over a series of rounds they "contribute individual knowledge, assess group views, and revise their judgements, and express their reasons when they disagree" (Hung *et al*., 2008:191; Dalkey and Helmer, 1963; Dalkey, 1972). Consequently, Delphi is premised on the belief that collective wisdom provides a more robust and informed perspective than individual opinion (Powell, 2003). It provides an 'average' of expert opinion and encourages re-evaluation. While 'Delphi' is quite an elastic method that can take different forms which can apply to different settings and disciplines, all Delphi approaches are generally unified by four diagnostic characteristics (Skulmoski *et al.*, 2007);

i) *Anonymity of participants*
ii) *Iteration*
iii) *Controlled feedback*
iv) *Statistical aggregation of group responses.*

The significance of these attributes to this research design will emerge throughout this chapter.

[2] For details on the history of Delphi and different types see Linstone & Turoff (1975) and Skulmoski *et al.* (2007).

4.3.1.1. Recruiting an 'expert panel'

Because Delphi is not dependent upon a statistical, representative sample, ensuring that the panel comprises appropriate individuals is unquestionably the most critical component of Delphi design (Okoli & Pawlowski, 2004). The sampling strategy must be purposive; 'experts' must be selected on the basis of their ability to provide informed insight. On these grounds, 'snowballing', whereby respondents are recruited partly through recommendations from previous respondents is a commonly used approach (Skulmoski *et al*., 2007). Panel sizes vary, and are dependent upon the nature of the research and the resources available to the researcher (Hung *et al*., 2008). Typically it should consist of somewhere between ten and twenty members; any less and the richness, and representative pooling of perspective is not attained, any more and a low response rate is likely to emerge and the panel becomes unmanageable (Skulmoski *et al*, 2007). The panel for this 'wildland Delphi' is considered in Section 4.4.5. [3]

4.3.1.2. Delphi Advantages

Delphi offers a rigorous and robust methodology, founded upon collective knowledge which is further validated through several iterative 'response and revision' rounds (Okoli & Pawlowski, 2004; Skulmoski *et al*, 2007). Furthermore, its iterative nature means it generally yields richer data than conventional qualitative methods such as surveys and one-off interviews (Okoli & Pawlowski, 2004). Delphi data tend to be deep, detailed, reasoned and insightful (Franklin & Hart, 2007). Table 4.2 provides a synthesis of common advantages and limitations associated with the Delphi method.

[3] Despite its significance, the rationale for panel selection remains conceptually undeveloped and is rarely explained (Glass, 2011).

Advantages/Strengths	***Limitations/Weaknesses***
Design & implementation advantages • *High response rates and low attrition due to obligation of verbal contract* • *Provides a means of structured group communication* • *Avoids direct confrontation between experts* • *Assembles individuals from geographically disperse locations into one forum* • *Lessens the potential for the 'loudest voice' being heard most clearly* *Theoretical advantages* • *Consensus building* • *Eliminates the potential for 'strategic bias' through formation of alliances* • *Future forecasting* • *Anonymity and confidentiality of respondents* • *Cost effective (although somewhat dependent on individual research circumstances)* • *Flexibility and adaptability* • *Thoughtful and considered responses* • *Engaging process for respondents* • *Encourages honest opinion free from group influence* • *Very focussed – retains respondent interest by concerning them with the epicentre of issues* • *Aggregates collective wisdom*	*Design & implementation limitations* • *Potential group pressure for consensus rather than genuine i.e. concerns about 'middle of the road consensus'* • *Feedback component may lead to conformity as opposed to consensus* • *Intensive for respondent and researcher* • *Necessitates ongoing respondent commitment* • *Potential 'down time', i.e. time delays between rounds* • *Requires skill in written communication* • *Potential for high attrition and low response rates due to longevity of process* • *Subjectivity of panel selection* *Theoretical limitations* • *Outcomes are, by their very nature, very perceptual* • *Potential for researcher bias as the researcher may establish a rapport with individual respondents*

Table 4.2*: The key advantages and limitations associated with the Delphi technique (adapted from Okoli & Pawlowski, 2004; Hsu & Sandford, 2007; Skulmoski et al, 2007; Hung et al., 2008). As is evident in this Table, the labelling of Delphi attributes as 'advantages' or 'limitations' is very context-dependent; perceived advantages can become disadvantages from alternative vantage points, and vice versa, i.e. while the anonymity aspect of Delphi is commonly cited as an advantage, Sackman (1975) points out respondents may be less considered and more reckless in their responses due to such unaccountability.* [4]

[4] Sackman (1975) provides the most detailed evaluation of the key criticisms of Delphi, esp. the curtailing the articulation of new ideas through its structured format. However, a well-run Delphi is guided by the expert panel itself and should not, therefore, be constrained by the process. Delphi success is largely dependent on the researcher's ability to develop an engaging plan which is adaptable and flexible in the face of participants' apprehensions and concerns.

The above account of the Delphi process is necessarily brief and compressed, but comprehensive reviews are provided by Linstone & Turoff (1975), Rowe & Wright (1999) and Turoff (2002).

4.3.2. Q-Methodology

Similarly to Delphi, Q-methodology is concerned with taking widely divergent opinions and encapsulating them in just a few 'factors' or 'variables'.[5] An empirical research technique concerned with the statistical relationships between viewpoints, Q-methodology provides a quantitative, analytical method for interpreting, and bringing a scientific framework to, the subjectivity of viewpoint (Coogan & Herrington, 2011). Through inter-correlation and factor analysis, Q-methodology reveals the key viewpoints extant among a particular group of respondents, and more importantly "allows these viewpoints to be understood holistically and to a high level of quantitative detail" (Watts & Stenner, 2012:4). Accordingly, it provides an innovative way of defining the discourses which frame participants' views and perspectives by asking respondents what is significant from their perspective and exploring areas of consensus and contestation in viewpoints (Rajé, 2007). The distinguishing property of Q is therefore that, unlike other quantitative approaches, it is concerned with establishing patterns *within* perspectives, rather than patterns across specific demographics such as gender or age (Barry & Proops, 1999). Consequently, the greatest strength of Q-methodology is its pursuit of holism. It is premised on the idea that the whole is greater than the sum of its parts; the power of a well-executed Q-study rests on its ability to produce holistic data (Watts & Stenner, 2012).

At its most fundamental level, Q-methodology requires respondents to rank a number of carefully selected statements (*the Q-set*) in accordance with an order of instruction, typically 'most agree with' to 'least agree with' (Van Exel & de Graaf, 2005).[6] The first phase of any Q-study is identifying appropriate statements to comprise this Q-set. This begins by establishing a 'concourse' – a technical term describing the sum of the commentary surrounding the issue under discussion – (Van Exel & de Graaf, 2005) – which means collecting the range of statements which capture the essence of everyday commentary about the subject in question. This might be obtained through a literature review, media-review or participant observation, for example, and describes the relatively exhaustive collection of statements from all discourses concerning the given subject (Van Exel & de Graaf, 2005; Rajé, 2007). In this instance it is derived from the expert discussion in Delphi round 1 to ensure it is rooted in the reality of on the ground perspectives (see Section 4.4.5). Having established the concourse, a structured

[5] Brown (1980; 1993) provides a comprehensive account of the history of Q-methodology, detailing its development in the 1930s by psychologist, William Stevenson, in his endeavour to explore the 'science of subjectivity'.

[6] The various subjects for ranking need not always be written statements; they may be audio recordings, for instance, or photographs. As long as the items for sorting represent some form of stimulus then there are no limitations (Brown, 1993).

sampling technique must be used to decide which statements will become part of the Q-set (i.e. translated into neutral statements). It is imperative that these statements represent a comprehensive, un-skewed set and that they are meaningful (Watts & Stenner, 2012). The P-set (the sample of participants) is then, one by one, presented with the Q-set and asked to arrange these statements into a meaningful pattern. The resultant order of statements is referred to as a 'Q sort' and collectively the Q-sort for each respondent provides the data required for statistical factor analysis. Figure 4.2 explores the different stages of implementing a Q-study.

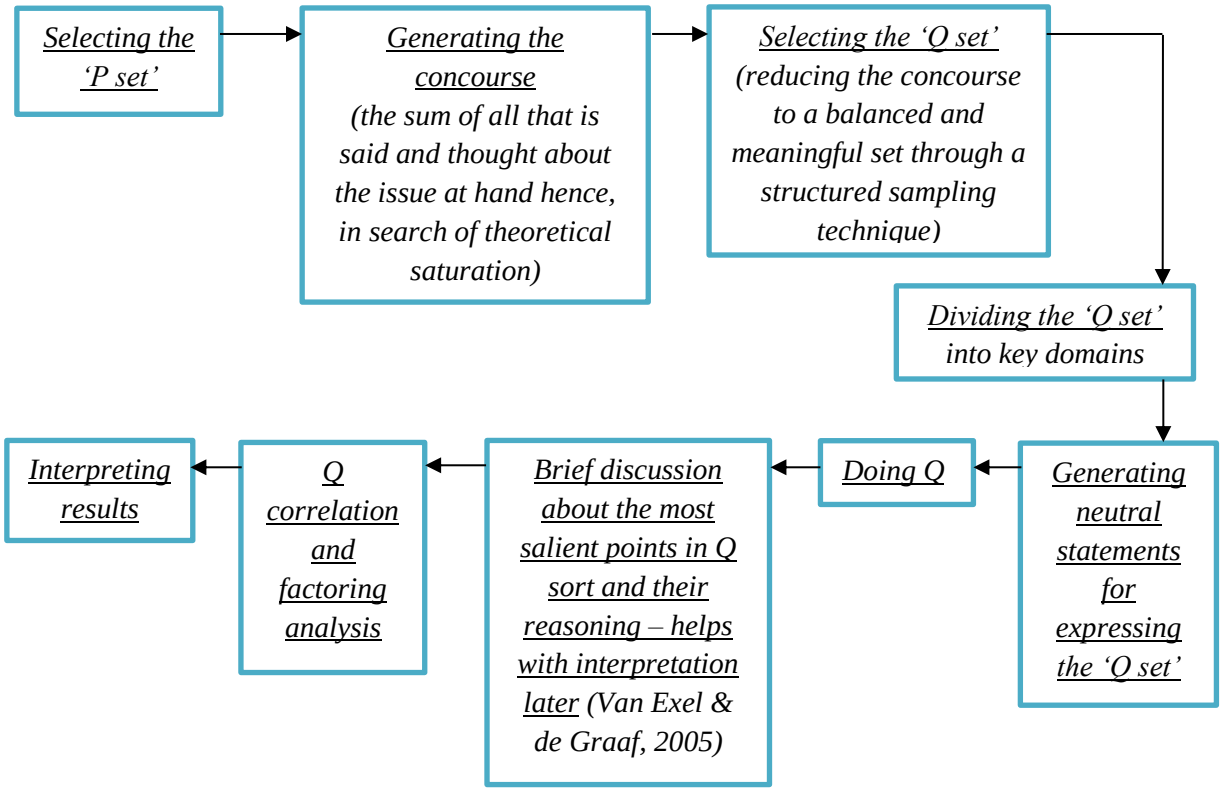


***Figure 4.2**: The different stages of consideration in the design and implementation of a Q-study. Design choices associated with these stages for this Q-study (e.g. the structured sampling technique used to generate the Q-set) are detailed in Table 4.7, Section 4.4.5.*

Typically, when the P-set is presented with the Q-set they are also provided with a large grid (Q-grid) with the over-arching question (condition of instruction) at the top. Each respondent is expected to sort the items into the spaces provided on the grid, as opposed to simply linearly from highest to lowest. While using a forced distribution such as this is often beneficial through its provision of a framework for each respondent to work within, it is not essential and the nature of this rarely affects the results and

interpretation (McKeown & Thomas, 1988).[7] Typically this distribution will employ a Likert-style distribution range of -5 to +5. However, the advantage of a Q-study over a conventional Likert-scale questionnaire is that the overall matrix of a Q-sort encapsulates the fact that people's viewpoints on specific issues are never considered in isolation from other related issues; Q-sorts represent relative, rather than absolute, scale (Watts & Stenner, 2012). 'Best-worst' methodologies such as this thereby incite more meaningful responses (Wilson-Smith *et al.*, 2012). The significance of this is that while a participant might state that all of the statements are important to their vision, a relative ranking can still be performed. During this ranking process and afterwards, a discussion between the research and respondent will ensue regarding their rationale for this pattern (Brown, 1980). This discussion will particularly emphasise the cards grouped to either end of the grid as zero typically represents the point from which items take on meaning (Brown, 1993). Logically, therefore, the items located towards the extremities represent perspectives which are further from this median point. The Q-sort therefore represents a skeletal structure and the auxiliary discussion adds flesh to these bones. Detail of the practical implementation of the Q-sort is given in Section 4.4.5.

4.3.2.1. Selecting the P-set

The participants in Q-methodology, like Delphi, do not comprise a random sample. Q-methodology also does not rely on a large number of subjects (Barry & Proops, 1999). Because it is not concerned with examining the population as a whole it requires a limited number of subjects who have been carefully selected for their connection to the issues explored, and hence are theoretically saturated (Brown, 1980). The P-set should consist of individuals who represent the range of positions and anticipated viewpoints (Van Exel & de Graaf, 2005). It is therefore "a structured sample of respondents who are theoretically relevant to the problem under consideration; for instance, persons who are expected to have a clear and distinct viewpoint regarding the problem and, in that quality, may define a factor" (Van Exel & de Graaf 2005:6). The size of the P-set varies widely, but is always smaller than the Q-set (Van Exel & de Graaf, 2005).

4.3.2.2. The statistical theory of Q

As a derivation or inversion of factor analysis, Q-analysis aims to reduce a set of variables (the Q-sorts) to a lower number of variables (*alias* factors) by describing and accounting for as much of the variability among these correlated variables as possible by establishing natural groupings within the individual Q-sorts (Rajé, 2007). Q-analysis

[7] A key benefit associated with forced distribution is that it encourages respondents to consider their ranking very carefully, and it reduces error during respondent sorting and subsequent inputting of data into Q-software (Watts & Stenner, 2012).

reveals patterns of viewpoint across respondents Q-sorts as similarly rankings of statements load significantly on the same factors (Coogan & Herrington, 2011). However, the most diagnostic feature of Q-methodology is its deviation from the most conventional form of factor analysis, R-methodology (Brown, 1993). Whereas 'R method' is concerned with identifying correlations between variables, method Q describes correlations between subjects across a number of variables (Barry & Proops, 1999). Therefore, while R-methodology might dissect the components of viewpoint, it provides no means of bringing those different influences together into one overall perspective. Through Q-methodology, the respondents become the variables as all of the individual items become homogenous relative to the individual who sorted them; the factor analysis considers the holistic picture of the whole ranking (Coogan & Herrington, 2011). Consequently, with the sorted matrix being treated as a single gestalt entity, "[t]he results of a Q-methodological study can […] describe a population of viewpoints and not, like in R, a population of people" (Van Exel & de Graaf, 2005:2; Coogan & Herrington, 2011; Watts & Stenner, 2012). For ease of interpretation, the intricacies of Q-analysis are discussed in Chapter 8 where it is integrated into the discussion of results.

4.3.2.3. Q Advantages

While quantitative studies often generate large volumes of data in the name of scientific rigour, qualitative data are typically less systematic and concerned with the depth and richness of insights, rather than their representation of a particular population. As a semi structured survey technique which essentially reverses the 'population' and 'variable' of common quantitative studies, Q-methodology offers rich and grounded insight into complex problems by combining the strengths of both qualitative and quantitative analysis (Watts & Stenner, 2012). Consequently, the strength of Q is not in the number of people interviewed, making it a manageable, convenient research technique. Furthermore, the relative, as opposed to absolute, value judgements that it obtains means it is well equipped to understand the complexity of real world enquiry as inferences about the relative importance of other variables can be made on the back of each statement. Some further strengths and weakness of Q-methodology are presented in Table 4.3.

Q Advantages/Strengths	*Q Limitations/Weaknesses*
• *Combines the relative strengths of quantitative and qualitative analysis,* • *Does not require great numbers of participants to validate it (even a small number of subjects can provide theoretical saturation if they have different perspectives)* • *Rebalances power relations between researcher and respondent, in favour of respondent* • *Adept at dealing with diverse and subjective viewpoints,* • *Views data holistically; encapsulates the fact that things are not viewed in isolation but relative to other ideas,* • *Stimulating research process for respondents*	• *Relatively intensive and demanding on respondents* • *Accurate interpretation necessitates appropriate and considered analysis to ensure all Q-sorts are considered as a whole,*

Table 4.3: *The key advantages and limitations of Q-methodology (summarised from Barry & Proops, 1999; Van Exel & de Graaf, 2005; Watts & Stenner, 2012).*

4.4. Rationalising research design: understanding nuances

Social science research must be flexible to maximise the degree of insight it provides; and "*this flexibility does allow very considerable deviation and adaptation of design to occur"* (Grbich, 2007:2; Clifford & Valentine, 2003). Research methodologies must therefore be customised to the needs, and limitations, of a specific research context. Given the intricacies of wildland management discourses, a customised and multi-part research methodology is required. Accordingly, as Table 4.1 details, this research employs a series of phases which are triangulated with one another. Each phase is now considered individually.

4.4.1. Phase 1: Discourse analysis

Discourse analysis was employed to review the policy perspective on Scotland's wildland. Particular attention was given to the meaning of wildland and to the nature of the rhetoric concerned with restoring wild quality. These documents (Table 4.4) were gathered through online searches using a snowball approach and were thematically coded using QSR Nvivo software (see Mason, 1994; Potter & Wetherall, 1994; Bazeley, 2007). The rationale for the sample documents selected was that they had direct policy relevance to ideas of wildness, or that they connected strongly with on the ground change which was propelled by ideas of rewilding.

Source	Publication date
SNH Policy Statement 'Wildness in Scotland's Countryside	*2002*
NTS Wildland Policy	*2002*
Scottish Executive Scottish Forestry Strategy	*2006*
JMT Policy Statement on Wildland	*2010*
The Mar Lodge Review	*2011*
CNPA's response to the Mar Lodge Review	*2011*
CNPA Deer Framework	*2011*
CNPA and LTTNP Public Perceptions Survey of Wildness in Scotland	*2012*

***Table 4.4**: The documents upon which discourse analysis was performed.*

4.4.2. Phases 2 & 3: Semi-structured interviews

To establish the broader international context and the foundations of the debate in Scotland, phases 2 and 3 are exploratory in nature. As the nature of this research design is intensive (rather than extensive) in that it seeks to move beyond mere description, semi-structured interviews with a representative sample was the obvious methodological choice (Sayer, 1992; Bryman, 2012).[8] Respondents were sampled purposively to provide an illustrative, as opposed to comprehensive, sample and snowballing was used to ensure it was far-reaching and representative.

Face-to-face interviews were considered the most appropriate interview style due to the conceptual and philosophical complexity of the discussion themes; this approach i) provides the opportunity to generate rich data, and ii) can consider the contextual and relational aspects of respondents' viewpoints, and is thereby consistent with the critical-realist position of this research (Gillham, 2005).[9] The researcher used an interview prompt-guide (see Chapters 5 and 6), but natural trajectories in the conversation were encouraged due to the scoping nature of these phases; afterall, phase 3 particularly, was designed to identify topic areas of relevance for developing the first round of phase 4. After a phatic beginning and the collection of some demographic detail, natural exploratory conservation ensued (Ritchie *et al*, 2003). Respondents were sampled purposively, providing an illustrative rather than comprehensive sample, and are identified in the results chapters which correspond with each phase (Chapters 5 and 6). In phase 2 America, New Zealand and Europe (most notably the North) provide three

[8] Semi-structured interviews around a number of pre-determined, but open-ended questions and themes provided a structure thereby ensuring interviews were focused and directional, but flexibility is still inbuilt (Dunn, 2000).

[9] Due to the constraints of one respondent's calendar, one interview in phase 3 was carried out using Skype.

distinct sampling frames as these geographical regions were selected as different study areas. These areas were chosen on the basis that (i) America is historically significant to wilderness discourse, (ii) New Zealand is considered to have a distinct understanding of wilderness internationally (Cessford, 2001) and (iii) Europe has a human history and context which is broadly analogous to Scotland. A strong advantage of Northern Europe in particular was the potential for indigenous cultures and the place of subsistence practices to arise in discussion, a theme which it was anticipated would be important in Scottish discussions. Beyond these three regions, Australia was considered on the grounds that some important literature on wilderness framing has emerged from there in the past decade (e.g. see Washington, 2007). However, this was ultimately rejected in favour of New Zealand given its small island status (akin to the UK) and a potential commentary on the importance of situation and context to rewilding narratives. Any regions in the tropics were rejected from the outset on the basis that environmentally they were too different from Scotland to allow for comparison, and because to date ideas of rewilding have been associated with the West.

All interviews were recorded, fully transcribed and subjected to thematic analysis in QR Nvivo software. Preliminary analysis, involving thorough reading and re-reading of all transcripts and field notes in a framework approach, allowed a matrix of over-arching, discursive themes to be identified as a basis for ordering and synthesising data. Within each theme a number of codes were identified (Patton, 2002). Coding was iterative, taking a hermeneutic approach (similarly to Mausner, 1996), meaning broad, meta-level themes were analysed to generate sub-themes.

4.4.3. Phase 4: Integrating Delphi & Q-methodology

This research methodology culminates in the integrated Delphi and Q-methodology phase, designed to provide a discursive, deliberative forum for case-study-like evaluations of how wildland is conceptualised and managed on seventeen large rural land holdings in Scotland. The aim of this adapted Delphi phase is to explore the current range of wildland conservation initiatives emergent in the Scottish Highlands and to establish a typology of these approaches. Both the Delphi and Q-methodology are proficient at providing a nuanced understanding of subjects. As exploratory techniques, they are designed for the very purpose of exposing the esoteric nature and depth of complexity. They are therefore concerned with generating the flow of ideas and collaborative discussion. Combining the two therefore provides a tailored ‘wildland’ methodology.

While a number of alternative approaches to this mixed-methodology, such as holding a series of workshops, were considered, the idiosyncrasies of historical relationships between the stakeholders presented a number of challenges; for instance, direct confrontation between stakeholders with acrimonious histories might induce “the hasty

formulation of preconceived notions, an inclination to close one's mind to novel ideas, a tendency to defend a stance once taken, or alternatively and sometimes alternately, a predisposition to be swayed by persuasively stated opinions of others" (Dalkey & Helmer, 1963:459; Okoli & Pawlowski, 2004). By adapting the Delphi technique, a deliberative space and the opportunity to co-produce a strategic direction for the future management of Scotland's wildland is afforded, while minimising confrontation and maximising collaboration. The flexibility of the Delphi method is its greatest asset and is explicit in the number of research design considerations associated with its implementation, as is exemplified in Table 4.5. For this reason there is no conceptual constraint preventing the incorporation of Q-methodology into a Delphi round.

"One quickly concludes that there is no "typical" Delphi; rather that the method is modified to suit the circumstances and research question" (Skulmoski *et al*., 2007:5)

The advantages of employing Delphi in the wildland context are clear. 'Delphi problems' are complex problems which cannot be resolved through a literature review alone (Kenyon *et al,* 2008). The 'uncharted nature' of rewilding in academic literature is testimony to the appropriateness of Delphi in this instance. "The method can be applied to problems that do not lend themselves to precise analytical techniques, but rather could benefit from the subjective judgments of individuals on a collective basis" (Skulmoski *et al*., 2007:2). 'Rewilding Scotland' is clearly a 'Delphi problem'. Furthermore, Glass *et al*. (2011) provide empirical support for Delphi's success when communicating with upland land management stakeholders with their history of poor communication channels. Managers of wildland are an eclectic mix of heterogeneous individuals, organisations, charities and trusts. The strained tolerance demonstrated between these stakeholders is unlikely to make for a constructive environment conducive to open-discussion in a workshop scenario, especially given the contentious nature of the topic areas. This adapted Delphi model provides a 'colloquium' for constructive discussion which encourages forthrightness and guilelessness amongst, what is often, a sceptical and fractious cohort of stakeholders. Consideration of the nature of wildland managers and owners has been crucial in the design process of this Delphi model.

The advantages of Delphi in this instance are explored in Table 4.5.

'Wildland' arguments favouring Delphi	
Anonymity	Stakeholder concern at speaking out publically about sensitive and contentious issues
Fractious communications	'Experts' involved have very diverse backgrounds and expertise and do not have a history of effective communication with one another (i.e. private estate ownership, NGOs, SNH)
Resourcing limitations	The financial and time implications of alternative methodologies, such as a series of workshops, are too great
Strategic biasing	Avoidance of 'group thought'; undue influence of dominant personalities in a sector often characterised by 'strong characters'; concern for the integrity of workshop meetings through the 'bandwagon effect' and potential for sectors uniting
Rapport	The increased likelihood of 'buy in' on the basis of forming a relationship with the researcher through an ongoing process, and the informality of being on each respondent's 'home turf'
Reflection	In a field characterised by complex – and often subtle – issues, strong perspectives, little dialogue and 'closed ears', Delphi maximises reflection and revision
Problem focussed	Despite of all the extraneous issues surrounding upland management, Delphi keeps participants focussed on specific areas of discussion through structured communication
Panel driven	As wildland management concerns such a diverse array of stakeholders, a primary Delphi advantage is that it is guided by a panel rather than individual opinion; a good selling point for a stakeholder sector which often states it is 'not listened to'
Flexibility	The research process is driven by the stakeholders themselves, rather than the researcher, thereby ensuring this research is grounded in practical reality

***Table 4.5**: Arguments favouring the employment of a Delphi research model (Glass, 2011; Linstone & Turoff, 2002; Franklin & Hart, 2007).*

Q-methodology was fused into this Delphi design for a number of reasons. Given its focus on subjectivity, Q-methodology presents a useful technique for exploring the subtle variations in the management of Scotland's wild places. Equally, as a form of cluster analysis, the integrated Q component provides the foundations for a taxonomy

which as an output of this research could be beneficial in a policy context. The quantitative nature of Q-methodology added another lay of texture and triangulates the other datasets associated with this research, thereby substantiating the overall results. One criticism of Q-methodology in the past has been its faith in sorting items of "unknown reliability" with respect to how the concourse is established (Van Exel & de Graaf, 2005:3). However, in this instance because the items were sourced through the rigour of the Delphi process this concern is dispelled. Using the initial Delphi round to provide the concourse for Q-methodology ensures that the Q-exercise is grounded in the reality of upland management thereby adding rigour and validity to the overall research process (Brown, 1993). Because Q-methodology is concerned with subjectivity it presents a useful technique for exploring the subtle variations and range of approaches to wildland management.

4.4.4. Conceptual framework for the 'wildland Delphi'

The rationale for this adapted Delphi design is summarised in Table 4.6. This framework details the conceptual requirements of this research, the associated challenges in Scotland's wildland context and the ways in which this methodological framework is designed to overcome these difficulties.

Research objective	*Research design requirement*	*Challenge in the wildland context*	*Methodological Solution*
Explore the meaning and characterisation of rewilding discourses	Account for, understand and describe the diverse range of viewpoints and perspectives	Enabling comparison of perspectives of individuals	Bring these viewpoints and perspectives together under one framework
To consider the nature of the ideologies which underpin rewilding discourses	Consider the reasons for conflicting visions	Enabling stakeholders with an acrimonious history of communication to consider other stakeholders perspectives	Create a safe, manageable, environment for open dialogue
To understand the conceptual paradoxes inherent within the rewilding concept *To understand how restoring wilderness values can be reconciled with an ambiguous, storied wildland context*	Reveal the degree of conceptual incongruity	Generating detailed, analytical data at an abstruse conceptual and philosophical level that many stakeholders are likely to be uncomfortable with	Iterative, recursive, deliberative methodology which is based on a series of rounds, where each round builds on the previous
To consider the practical challenges associated with rewilding paradoxes	Move towards a strategic wildland agenda	Requires collaborative interaction **between** stakeholders and necessitates establishing some form of nomenclature of Scotland's wildland management approaches	Create a discursive forum for iterative discussion with a quantitative exercise capable of objectively classifying approaches

***Table 4.6**: Conceptual framework for integrated Delphi research design.*

A detailed overview of the iterative phases comprising this integrated model is provided below.

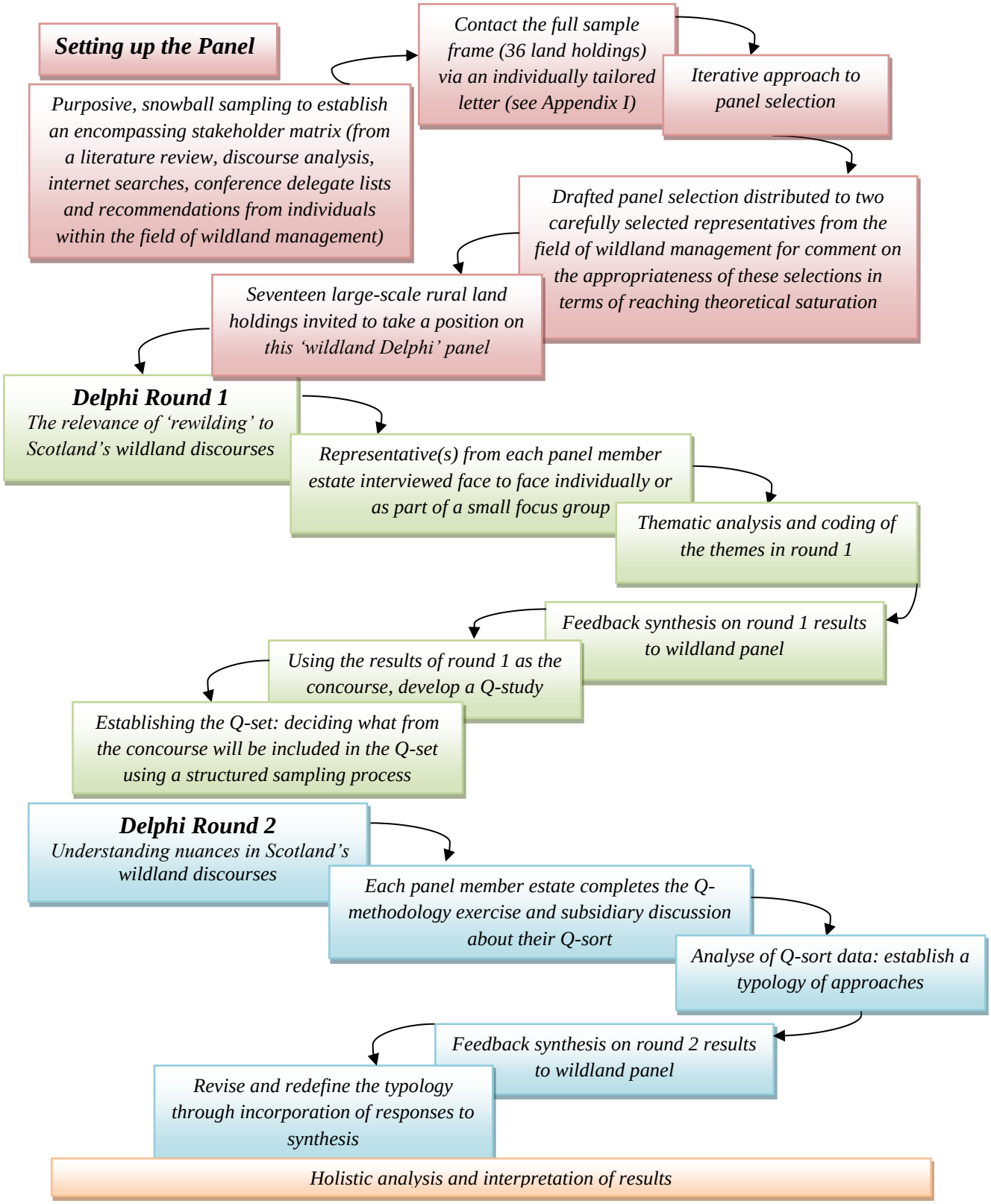


Figure 4.3: *Diagrammatic representation of the iterative nature of this adapted wildland Delphi-mode.*

4.4.5. Design Choices for adapted wildland Delphi

The inherent flexibility of the Delphi method results in a number of context specific design choices. As Table 4.6 implies, the management of Scotland's landscapes of wild character is very idiosyncratic. Consequently, a significant amount of time was invested in ensuring that the research decisions in this context were robust (Table 4.7).

'Delphi Research Design Considerations	*Adapted Wildland Delphi Design Choices*
Methodological choices (i.e. quantitative v. qualitative v. mixed method)	**Mixed method**: round 1 is qualitative, while round 2 is quantitative, thereby providing the advantages of cluster analysis without losing any of the depth of meaning and context
Expertise criteria (i.e. technical knowledge v. experience v. willing to participate)	**Practitioners:** an informed perspective on wildland through employment in that sector, i.e. predominantly Factors, but also conservation officers, rangers, ghillies and stalkers. With an emphasis on the interface between strategic land management and conservation discourse, the panel consisted of individuals with practical insight, rather than simply conceptual or academic
Number of participants	**Seventeen**: a sufficient sample size required to represent the heterogeneous nature of the various land management sectors in Scotland (i.e. NGO ownership, private estates, community trusts) while also being manageable within time/resource constraints
Number of Delphi rounds	**Two**: in conjunction with the depth of the Q-analysis, two rounds were deemed extensive enough to yield rich data without inducing stakeholder fatigue. Furthermore, guidance was sought from other Delphi studies where two rounds worked effectively
Mode of interaction (i.e. email v. interview v. telephone)	**Face-to-face interviews/mini focus groups**: the advantages of building a rapport with land managers who might feel threatened by discussions concerning 'wildness' outweigh the time-intensive nature of this approach
Mode of feedback (i.e. postal v. online v. verbal)	**Postal & email**: through email because "quick turnaround times help to keep enthusiasm alive and participation high", unless requested otherwise (Skulmoski *et al.*, 2007:11)
Methods of results analysis	**Mixed**: round 1 results were subject to thematic analysis in social science software, round 2 results were analysed using a specialist Q-methodology software package

Continued….

'Delphi Research Design Considerations	*Adapted Wildland Delphi Design Choices*
Verification (i.e. through triangulation v. another sample set etc.)	**Triangulation:** the iterative nature of the series of phases (with triangulated rounds with those phases)
Level of anonymity	**Non-attribution**: Although anonymity typically is a defining attribute of Delphi, ensuring complete anonymity is challenging in Scotland's wildland management arena as obvious clues to an estate's identity are certain to arise in discussion (e.g. size or the nature of a controversial, high profile management measure). When faced with choice over the degree of anonymity, respondents opted for open knowledge over the estates involved in the process, but non-attribution in terms of 'who said what' (see Appendix II for detail)

Table 4.7*: Adapted wildland Delphi research considerations (Linstone & Turoff, 2002; Skulmoski et al, 2007; Glass, 2011).*

Ensuring a balanced P-set is arguably the most influential factor determining Delphi success (Day & Bobeva, 2005). As Figure 4.3 indicates, to ensure this panel was fully representative, this process began with the establishment of a comprehensive stakeholder matrix consisting of thirty-two Scottish land-holdings who met the fundamental recruitment criterion of managing 'wildland'[10] and being actively engaged in some basic restorative activity that might be considered 'rewilding' (e.g. promoting natural regeneration, removal of non-native species). Knowledge was, therefore, the most critical recruitment criteria; all land-holdings selected were understood to be 'rewilding' in some sense of the word.[11] Critically, therefore, the panel is not a random representation of upland estates. Twenty-two acceptances to this provisional invitation to participate were received. This number was deemed to be beyond the resource limitations of the researcher. Stakeholder analysis of these twenty-two enabled the researcher to reduce the panel size to an eclectic mix of seventeen who provided a representative cross-section in terms of management aims and objectives, ownership, estate nature, geographical location [12] and aspirations for the future. Brugha and Varvasovszky (2000) provide a detailed review of the 'stakeholder analysis' process. The composition of the panel is detailed and geographically presented in Table 4.8.

[10] Falling within the green area of SNH's relative wildness map (Table 4.8) was the simple criteria for defining wildland.

[11] With the exception of P2 and P5 who were selected on the basis that they have extensive knowledge of the issues, but are not advocates of the rewilding concept. These two estates were deemed important in that they are likely to offer an alternative perspective, thereby invoking deeper discussion.

[12] While there is a cluster of respondent estates in the Cairngorms National Park this is because this is where some of the most visionary, more mature 'rewilding estates' are located and CNPA are having significant discussions about 'wildness' currently (e.g. Carver et al., 2008; CNPA, 2011a).

	Estate	Delphi Ownership	Area
1.	*Corrour*	Private ownership	57,000ac/23,000ha
2.	*Alvie*	Private ownership	13,000 ac/5,300 ha
3.	*Rothiemurchus*	Private ownership	44,000 ac/18,000 ha
4.	*Coignafearn*	Private ownership	38,500 ac/15,500 ha
5.	*BeinDamph*	Private ownership	14,500 ac/6,000 ha
6.	*Ardverikie*	Private ownership	40,000 ac/16,000 ha
7.	*Glenfeshie*	Private ownership	25,000 ac/10,000 ha
8.	*Glenlude*	John Muir Trust (NGO)	350 ac/140 ha
9.	*Mar Lodge*	National Trust for Scotland (NGO)	73,000 ac/29,500 ha
10.	*Abernethy*	Royal Society for the Protection of Birds (NGO)	35,000 ac/14,000 ha
11.	*Creag Meagaidh*	Scottish Natural Heritage	9,900 ac/4,000 ha
12.	*Invereshie*	Scottish Natural Heritage	8,900 ac/ 3,600 ha
13.	*Knapdale*	NGO ownership	11,000 a/4,500 ha
14.	*Dundreggan*	Trees for Life (NGO)	10,000 ac/4,000 ha
15.	*Carrifran*	The Borders Forest Trust	1,600 ac/650 ha
16.	*North Harris*	The North Harris Trust	62,000 ac/25,000 ha
17.	*Applecross*	The Applecross Trust	70,000 ac/28,000 ha
			Total area: 513,750 ac / 207,200 ha

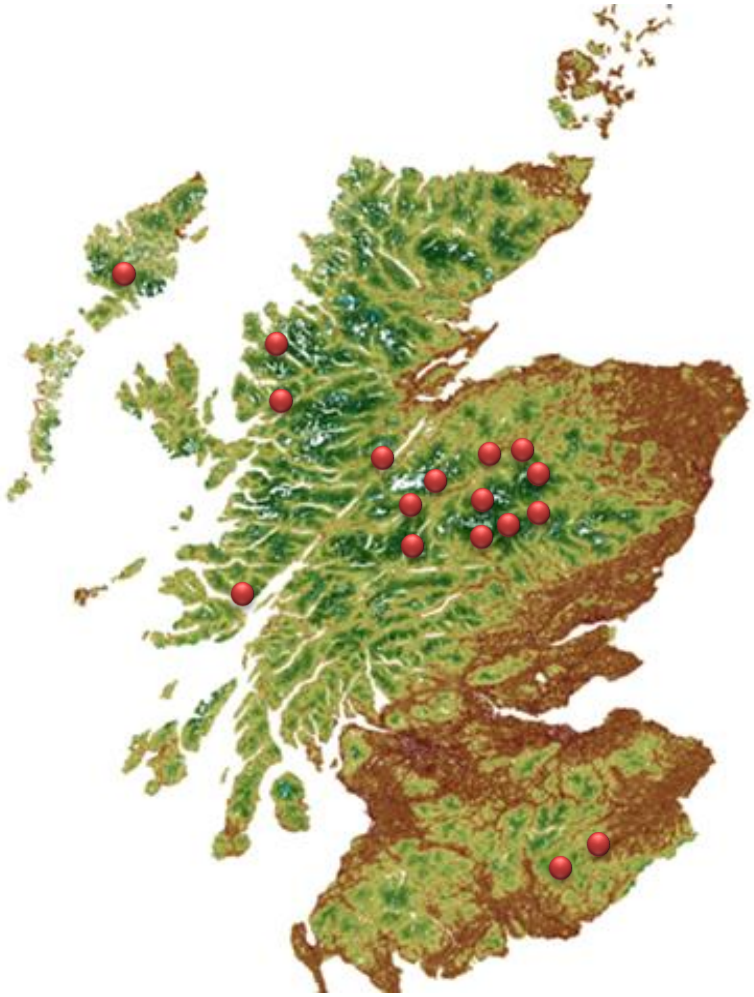
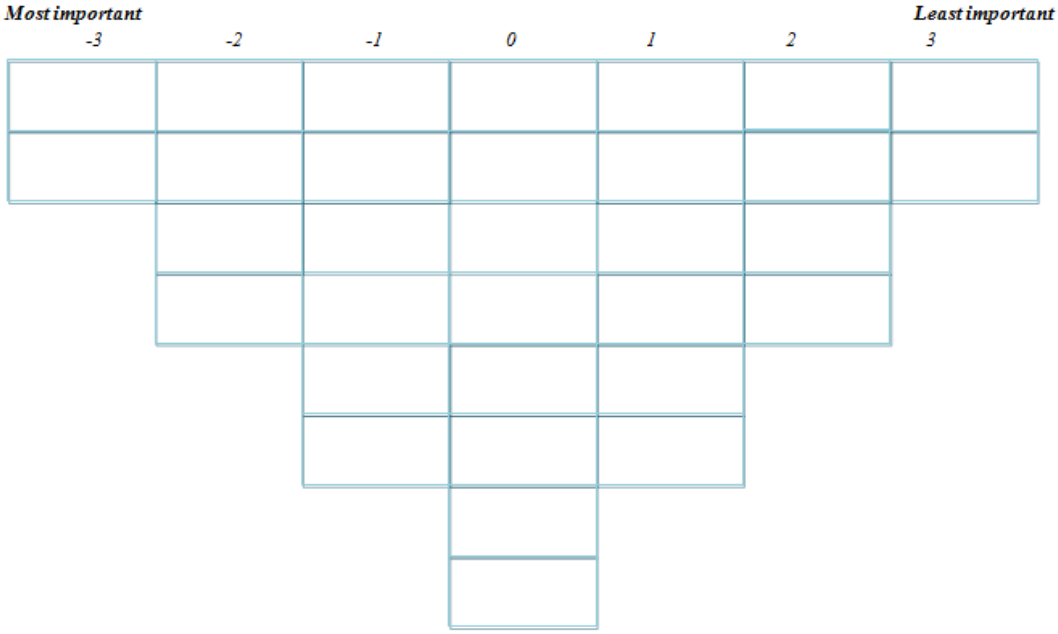


Table 4.8*: Membership of this wildland Delphi panel and the location of panellist estates on SNH's map of relative wildness. At the time of panel selection SNH (2014) had not published their finalised map of discrete Wild Land Areas (Appendix I). However, with the exception of sites 8, 15 and 16, all sites directly correlate with these areas of highest quality wildness regardless. Efforts to recruit a Forestry Commission Scotland land holding were unsuccessful. As a significant landowner in Scotland's uplands this is unfortunate, but their views are represented in Phase 3, when 2 FCS employees were interviewed.*

The integrated Q-component of this wildland model equally necessitated a number of context-specific design choices. While some of the Q parameters were pre-determined by the Delphi design (i.e. membership of the P-set), many were not. Decisions concerning the development of a well-structured and rigorous Q-set warrant significant attention because this is critical for Q success (Urquhart, 2008). The primary consideration is the need for saliency, coverage and balance (Watts & Stenner, 2005; 2012). The fact that the concourse for this Q study was generated from the purposively selected experts' discussion in Delphi round 1 was helpful in this regard. To select the Q-statements this round 1 data-set was thematically analysed and coded into categories and subcategories to identify issues and discourses which the study sought to illuminate. Beginning with a larger set of approximately 150 potential statements, a structured sampling technique was then used to establish a representative, un-value-laden Q-set.[13] A number of hypotheses, based on the scoping phase findings, were used to guide this selection, e.g. that different degrees of intervention should be represented and that broad ecological and landscape parameters of wildness should be incorporated. Finally, attention was given to rephrasing, or paraphrasing, these points into neutral, concise statements.

The statements comprising this Q-set are detailed in Appendix III. Thirty-two statements were employed, along with a fixed distribution, the nature of which is outlined in Table 4.9.



[13] While clarity in the statements is important, actually Coogan & Herrington (2011:25) point out that "ambiguity of a statement is not an issue, as participants are expected to give their own meaning to statements".

Forced Choice Frequency Distribution							
Ranking value	*-3*	*-2*	*-1*	*0*	*1*	*2*	*3*
Number of items	*2*	*4*	*6*	*8*	*6*	*4*	*2*

Table 4.9*: The fixed distribution of the Q-set employed. While this distribution range is relatively insignificant for the results, it does prevent user-error and provides a guiding framework within which respondents can work. Rather than respondents ranking the 32 statements from 1 to 32, this forced distribution requires respondents to pay particular attention to the extremities of their vision.*

Figure 4.5*: A land manager performing a Q-sort. Photo © Julian Orsi.*

The key design considerations for the Q-methodology round of this adapted Delphi model are summarised in Table 4.10. Q-methodology design is discussed in detail by Watts & Stenner (2012).

Q- Design Considerations	*Wildland Q-study Design Choices*
Number of statements in the Q-set	***Thirty-two****: a manageable number for respondents and researcher*
Number of respondents in the P-set	***Seventeen****: pre-decided in the establishment of the Delphi panel, but still an appropriate P-set for the nature of this Q-study*
Mode of Q-sorting ***(i.e. in person v. online)***	***Mixed:*** *(face-to-face and online) while respondents were presented with a choice, the majority of Q-sorting was done with paper cut-outs in the presence of the researcher, which is advantageous as it prevents double entry of statements and minimises respondent error*
Mode of stimulus ***(i.e. statements v. photographs v. audio)***	***Statement:*** *it was judged that the level of specific detail surrounding many items could not be encapsulated in anything other than statements; the diffuse, abstract nature of some wildland values would be compounded by the use of visual modality*

Table 4.10*: Q-methodology design considerations.*

All of the interviews in the Delphi-model part of the research were also recorded and transcribed verbatim and the transcripts organised using Nvivo. This means that, in total, the data-set for this research is as below (Table 4.11). However, prior to and after the formal, recorded Delphi interviews the researcher spent a considerable amount of time with panellists (e.g. volunteering and assisting in day-to-day management tasks on the land-holding - regularly in some instances, sharing coffee or receiving a tour of the estate). This period of researcher immersion in 'estate culture' was important for many the land management fraternity who are commonly suspicious of science and research (MacMillan & Phillip, 2010). It was significant to the development of researcher-respondent rapport and trust relationships, and to an informed, contextualised perspective when interpreting the transcribed data.

Phase	*Total*
Total hours of transcribed scoping data	*23 hrs 15 min*
Total hours of transcribed Delphi round 1 data	*45 hrs 20 min*
Total hours of transcribed international data	*22 hrs 20 min*
	Total*: 90 hrs 55 min*

Table 4.11*: Total transcribed data-set for this research.*

4.5. Data Analysis

Due to the mixed-method nature of this research, a number of analytical procedures were employed. For ease of interpretation, details of all analytic procedures are provided in the chapters where the corresponding results are presented.

4.6. Pilot Study

While piloting the Delphi process would have been impractical given the longevity of the process and the fact it was stakeholder led, the interview guides for each round and the Q-methodology exercise were piloted with six individuals connected to upland management in Scotland. Piloting the Q-sort was particularly beneficial in ensuring that any potential duplication between statements was minimised, clarity in wording was maximised and that unnecessarily technical jargon was avoided.[14] A significant amount of consideration was given to the presentation of the Q-sort. For instance, post-piloting the ranking distribution of -3 to +3 was removed to avoid negative to positive connotations. Furthermore, the statement numbers were removed to prevent respondents from noticing a consecutive sequence of numbers which could influence their subsequent decisions as they potentially begin to view the sort as a puzzle to solve (Brown, 1980).

4.7. Ethical Standards

Ethical approval for this research was sought from the University Teaching and Research Ethics Committee. A letter of ethical clearance is provided in Appendix IV. Key areas of ethical consideration can be identified as participant recruitment, confidentiality and anonymity, data storage, briefing and informed consent, debriefing, research with policy implications and researcher conduct.

4.8. Summary

This chapter has presented and justified the development of a unique, multi-phased, mixed methodology designed to explore the nature of the conceptual foundations, and practical tensions, associated wildland/rewilding discourses in the Scottish context. This adapted wildland Delphi model is situated within the context of the conceptual framework which guides this research, thereby ensuring that the specificity of the research context is at the epicentre of the research design. In doing so, it considers the

[14] While respondents were all 'experts' in this field, unnecessarily technical terminology could cause a loss of meaning.

methodological challenges inherent within the research context and supports a research methodology which minimises bias, while maximising depth of insight. Figure 4.6 details the overall structure of the remainder of this thesis, showing how the results of this methodology connect with subsequent chapters. While Chapter 6 focuses on the 'what' and 'how' of Scotland's rewilding movement, Chapters 7 and 8 focus on the 'why'.

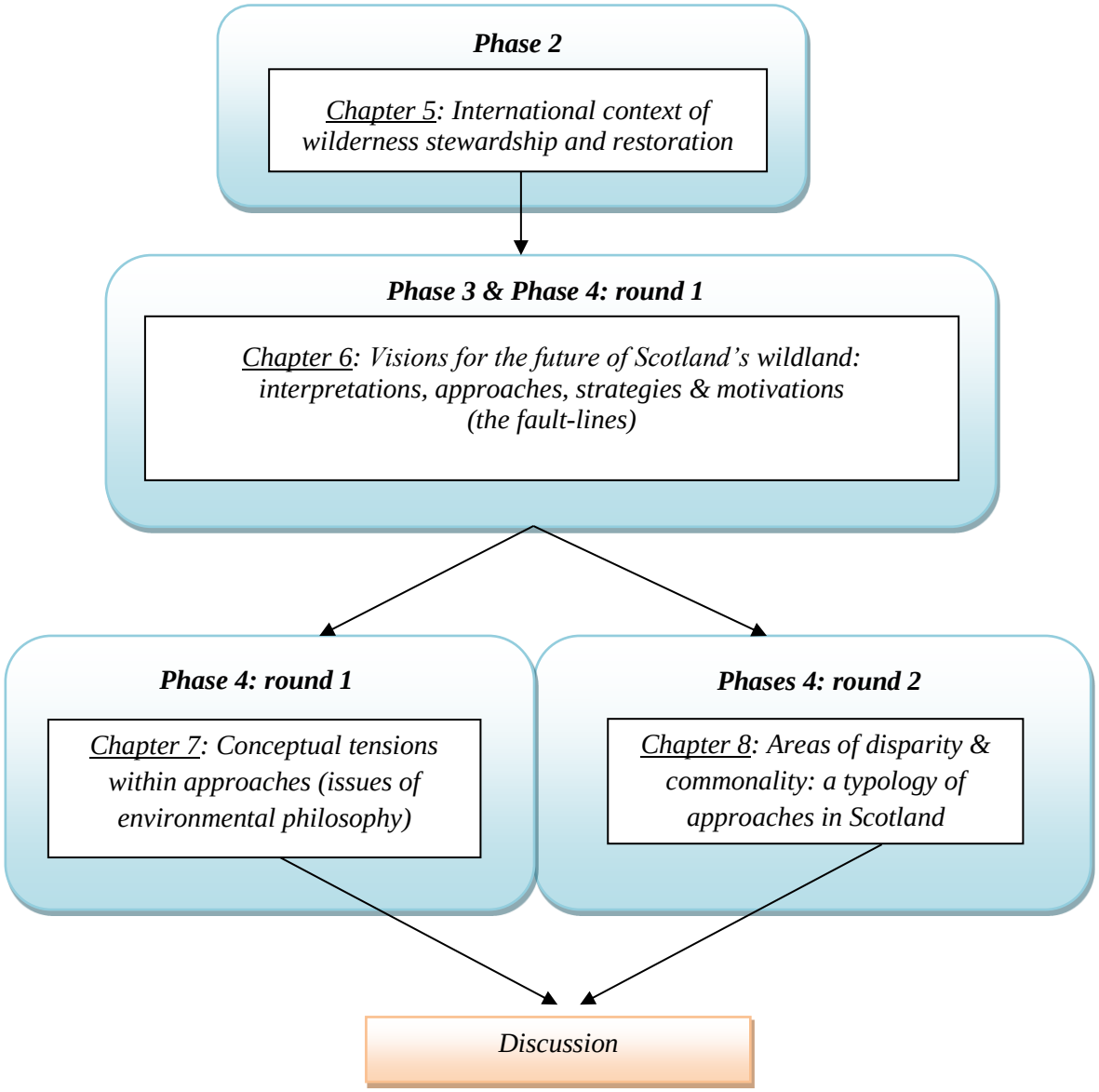


***Figure 4.6**: Overview of the research phases in relation to the overall thesis structure.*

Chapter 5

International perspectives on wilderness stewardship and restoration: results from overseas research

5.1 Chapter aims

This Chapter presents the results of overseas fieldwork in North America, New Zealand and Europe, in contexts where 'wilderness restoration' is gaining pace. It evaluates these restoration frameworks - most notably notions of 'rewilding' - in order to situate Scotland's current wildland movement within international understandings and practices. As the distinctiveness of Scotland's wildlands relative to international wilderness has been recognised, the perceived resonance of broader wilderness debate has been discounted and Scotland's wildland discussions have become rather parochial and myopic. However, considering that international wilderness policies, practices and thinking act as reference points for Scotland's distinctive 'wildland' context (Aitken, 1977; Lupp *et al.*, 2011), there is scope for these international frameworks to inform Scottish discussions to a much greater extent than at present. This chapter presents a comparative international backdrop against which the peculiarities of 'rewilding' Scotland can be evaluated. It elucidates the culturally defined nature of wilderness restoration frameworks and examines the extent to which wilderness conceptions shape restoration approaches.

Specifically, then, the chapter aims to:

- *consider the conceptual anchors used in the wilderness management and restoration frameworks in three continents*
- *establish how rewilding is understood in these contexts*
- *explore how conceptions of 'wilderness' guide and influence wilderness conservation strategies*

5.1.1 Reviewing the data-set

This chapter comprises twenty-six semi-structured interviews, totalling 23hrs 51 min of fully transcribed, QSR Nvivo analysed data, supported by unrecorded discussions and field observations. Respondents include land managers, academics, policy advisors and non-governmental organisation representatives (see Appendix V). While Chapter 4 provides a rationale for international site selection, it should be reiterated that this chapter does not set out to provide a comprehensive or representative international review; it is an illustrative discussion of perspectives which shed light on Scotland's debate. A significant bias towards North America is evidenced throughout this

discussion. This reflects the fact that American respondents were notably more engaged in the subject matter than others, and in many cases had clearly reflected more deeply on the issues. In turn, this arguably reflects the particularly challenging – and enlightening - nature of America's wilderness restoration context.

Each interview was conducted in accordance with the framework in Table 5.1. Supporting quotations from the transcribed interviews have been integrated throughout this discussion. These are presented in text boxes, with Roman numerals throughout the text corresponding with supporting quotes in subsequent boxes. Respondents associated with the specific viewpoints explored are shown in brackets following key points. These bracketed respondents are only exemplars of individuals associated with that perspective, rather than an exhaustive list. This approach is maintained throughout later results chapters.

Section title	***Themes***	***Rationale and pertinence to broader research context***
Wilderness Frameworks	▪ *Historical context* ▪ *The legislative context: statutory wilderness*	*To contextualise the data and to evaluate the significance of legal frameworks for the delivery of wilderness management **
Conceptions of wild places	▪ *The untouched frontier landscape,* ▪ *Landscape v. Ecology* ▪ *Ecocentrism v. Biocentrism*	*To clarify the concepts which guide stewardship and restoration efforts in wilderness areas*
Wilderness Stewardship	▪ *Aims and aspirations of wilderness managers* ▪ *Management practices* ▪ *The non-intervention position*	*To understand the visions of wilderness managers, the practical application of these management strategies and the degree of intervention required for their execution.*
The Restoration Paradigm and Rewilding	▪ *Restoration parameters* ▪ *Terminology and semantics* ▪ *The meaning of rewilding*	*To determine the degree to which strategies for managing wilderness are guided by restoration and to evaluate whether this may be conceptualised as 'rewilding'.*
The philosophical foundations of wilderness stewardship	▪ *Preservation, conservation and restoration* ▪ *Contested baselines* ▪ *Nativity, integrity, authenticity and historical fidelity*	*To understand the values and ethics which guide management prescriptions and to evaluate the degree to which this philosophical position is considered.*

Table 5.1: *The structure and themes used in the international interviews, exploring key issues from Chapter 2.*
*The implications of legal frameworks are particularly interesting for comparison with Scotland's non-statutory wildland context

5.2 International wilderness frameworks

While 'wilderness' might not be directly translatable into every language (Callicott, 2000), the sentiment that areas exhibiting special qualities of solitude, large-scale and lack of cultivation are worthy of protection is familiar to most parts of the globe (Kormos, 2008). Nonetheless, the culturally defined nature of the wilderness resource means it has different meanings in different parts of the world, where varying condition, size and social criteria are employed (Stankey & Martin, 1990; Dudley, 1996). The following section explores such disparities and discusses the dominant wilderness axioms drawing on data from three continents. Given the considerable body of literature on conceptions of wilderness (Cronon, 1996; Callicott & Nelson, 1998; Nelson & Callicott, 2008), the focus here is on the implications of such understandings for management and restoration mandates, particularly in legally designated wilderness.[1] A review of the dominant wilderness conceptions which frame discussions in the three study areas is a pre-requisite for understanding the significance of wilderness conceptions to restoration paradigms. These can be characterised, respectively, as the untouched frontier, recreational wilderness and cultural/social wilderness, and are described in turn below.

5.2.1 The untouched frontier landscape: American wilderness

There is a compelling argument for beginning this exploration of wilderness management in North America; the National Wilderness Preservation System in the United States provides the most commonly cited definition of 'wilderness' globally (Chapter 2). US 'Wilderness Areas' provide the best remaining examples of relatively unmodified land in the US, thereby combining "the sacred grandeur of the sublime with the primitive simplicity of the frontier" (Cronon, 1996:16). They are a manifestation of a pristine, utopian ideal and have immense cultural, moral and spiritual value. However, such intangible value builds considerable subjectivity into wilderness definition *(i)* and means that US Wilderness is significantly more than simply a biophysical land condition or a land area protected in statute *(ii)*. Beyond wilderness legislation, 'wilderness' is simply a place which exhibits a sense of wildness *(iii)*.

[1] Given the diffuse meaning of wilderness in popular conceptions, and the significance of legislation to the management of wilderness areas, these international discussions focussed on statutory wilderness where applicable. The fact that legal and sociological wilderness discourses are not always in harmony with one another raises interesting questions - such as which conception of wilderness should government land agencies manage towards – but these cannot be considered here.

(i) *"[…] we have about 75 people who work in this division who work on science or resource management and I would imagine that if you pooled them […] there would be a very large spectrum in terms of how people interpret the definition" (US3)*

(ii) *"[...] there are, in fact, characteristics of wilderness which are very different from just ecological processes […]and all the other things that would go into a resource plan" (US3)*

(iii) *"I guess the way that we often talk about it is we talk about the 'big W' wilderness, which is the legislative Wilderness Act land, and then the 'little w' wilderness which refers to wildness" (US3)*

This said, the significance of legislation to American conceptions of wilderness should not be underestimated. US participants sought refuge from the conceptual maelstrom surrounding wilderness in the objective legislative definition of the Wilderness Act. However, despite this seminal Act having long been celebrated as a global benchmark of wilderness conscience, only recently has consideration been given to its actual meaning *(i)*. In 2005 the improvised nature of US wilderness management was recognised *(ii)* and an inter-agency team set about understanding what is meant by 'preserving wilderness character', the fundamental objective in US wilderness management (Landres *et al.*, 2008).[2]

(i) *"It wasn't really until [recently. i.e. the past decade] that someone really started looking at 'okay, what is the mandate of the Wilderness Act'" (US6)*

(ii) *"[…] a lot of it [US Wilderness] was managed as Park managers felt it should be managed; […] not a lot of national consistency in terms of how we define and talk about wilderness" (US6)*

Four central qualities of 'wilderness character' emerge from the US interviews:

i. *'Natural'*

Protecting the "natural condition" of wilderness lands is a central mandate *(US3)*. This describes the belief that ecological systems in wilderness should be largely intact and free from human influence. Natural conditions are therefore a plumbline for unmodified, ecological integrity *(i)*. Native species composition in well-connected habitat networks is fundamental to such naturalness *(US2)*. The importance of plant and animal communities as indicators of wilderness quality has resulted in high profile

[2] This inter-agency team represented all of the land management agencies within the US Department of Interior (Bureau of Land Management, Fish and Wildlife Service, National Park Service, US Geological Survey and the US Forest Service) and produced a 2008 technical report entitled 'Keeping it Wild: an interagency strategy to monitor trends in wilderness character across the National Wilderness Preservation System' (Landres *et al*., 2008).

species such as the brown bear (*Ursus arctos*) and wolf (*Canis lupus*) being considered symbols of wildness (Garibaldi & Turner, 2004*)*.

(i)	*"[…] 'natural conditions' are self-explanatory; preserve the ecological integrity of the area (US6)*

ii. 'Untrammelled'

The 'untrammelled by man' (US Congress, 1964) mandate is distinctly American and describes the un-managed, un-manipulated quality of wilderness. 'Trammelling' therefore relates to the human tendency to over-manage *(i)*, particularly in terms of manipulating ecological processes. Untrammelled therefore means "remove the force of human management as much as possible" *(US3)* and demonstrate humility and restraint *(ii)*. However, the esoteric nature of 'untrammelled' has resulted in many divergent understandings of what its management implications are. While the term is essentially synonymous with 'self-willed' – thus describing the 'wildness' of wilderness (Cole, 2000a; 2001) - several respondents pointed out that colloquially, it is understood to mean 'untrampled' *(iii)* (Turner, 1996; Cole, 2001). Although the distinction between 'untrampled' and 'untrammelled' is subtle, it is important. While trampling implies physical damage to the land, trammelling refers to the impacts of management intervention on ecological processes *(iv)*.

(i)	*"[…] 'untrammelled' is saying that sometimes in wilderness it is better to have a hands off approach and let it do its own thing" (US6)*
(ii)	*"...what untrammelled really means [...] is that you exert very few influences on the wilderness landscape [...] it is very much a hands off approach" (US3)*
(iii)	*"[…] everybody that reads that word thinks it means 'don't trample'" (US3)*
(iv)	*"[…] so whereas the natural quality of wilderness is a lot about the state of the land – the ecological health – the untrammelled quality gets at "what actions do we take as managers?"" (US6)*

iii. 'Undeveloped'

The 'primitive landscape' perspective (that 'untrammelled' is so commonly mistaken to mean) is present in the 'undeveloped' axiom *(i)*. US wilderness is "undeveloped Federal land retaining its primeval character" (US Congress, 1964). As vignettes of primitive America (Leopold *et al.*, 1963), it is unblemished and has no permanent improvement or modern human occupation (Landres *et al.*, 2008). Wilderness is primitive in the sense that it is 'original' and representative of the earliest ages *(ii)* (Cole, 2000a); a primordial, "unimpaired standard" (Tweed, 2010b:7). Accordingly, wilderness is largely free from

human structures, developments and mechanical transport, with roadless-ness in particular being the gold standard of US wilderness (Woods, 1998).

(i)	*"It is really important that the wilderness has a primitive appearance when somebody is out there" (US2)*
(ii)	*"The wilderness is a bastion, I think, of really pristine conditions" (US1)*

iv. <u>Solitude or primitive, unconfined recreation</u>

"Preservation of a sizeable natural community is not really an end in itself" (Lucas, 1973:150) and for this reason provision of recreational opportunity is central *(i)*. The unmodified quality of wilderness is secured for the benefit of American people, rather than simply scientific reasons or for 'nature' itself *(US4)*. American wilderness protection is not about locking land up (Lucas, 1973).[3] While this recreational mandate can cause management tensions with other wilderness qualities *(ii)*, reconnecting people with the spiritual value of such places is important *(iii)*.

(i)	*"[…] providing access and enjoyment is a primary mandate" (US6)*
(ii)	*[…] you need people to experience the wilderness and to have support for the wilderness, but too many people and it has an impact on the wilderness character" (US4)*
(iii)	*"[…] solitude, we would recognise is not an ecological value, but it is an important value" (US1)*

Box 5.1: US Wilderness Framework Summary

US wilderness is both a 'place' and an 'ideal'; a place managed to preserve natural conditions, and ideal in that 'the earth and its community of life are untrammelled by man' (Landres, 2004). It is a biophysical condition, an experiential character, an existential paragon and a legislative designation. US conceptions of wilderness are conceived through a number of interrelated axioms and are thus all encompassing and holistic. The sum of such parts means that US wilderness management places faith in a "metaphysical ideal" (Chase, 1987:177) of how places ought to be (Rolston, 1990). Wilderness is the 'untouched frontier', the putative 'original' landscape.

[3] Feldman (2011a:192) explores how wilderness advocates of the early 20th C have a more inclusive view of lands influenced by humans, but with the 1960s and 1970s came the popularity of primitive recreation, creating a "standard that defined and values wilderness as a place without history".

5.2.2 New Zealand's 'recreational wilderness'

While extensive areas of New Zealand (NZ) can be considered *de facto* 'wild' *(i)*, 'wilderness' is a specific legal term. Provisions for 'wilderness areas' are made through three Acts associated with public conservation land; i) Conservation Act (1987), ii) Reserve Act (1977) iii) National Parks Act (1980). However, as Somers (2008) details, these Acts make no robust attempt at defining what 'wilderness' means. NZ's wilderness is thus very much defined by what can – but largely what cannot – be done in wilderness, rather than 'what is'. From the Department of Conservation's[4] (DOC) perspective, 'wilderness' is simply a management classification *(NZ2)*. NZ's Wilderness Policy (1985) makes an effort to lay down 'qualifying criteria' for wilderness, which prompted legal requirements in terms of size and development.

(i) *"[…] most of DOC land isn't wilderness area in legislation, but people would still perceive most of it as wilderness or wild country" (NZ4)*

The early beginnings of NZ's Wilderness Area system are associated with the outdoor recreation community (Molloy, 2001). The primary objective of wilderness is thus recreational *(i)*. NZ's wilderness framework is evidently conceived around the quality of unmodified and undeveloped primitivism and its associated provision of a 'wilderness experience'; it "embodies the notions of remoteness, solitude, freedom, romance and a feeling of empathy with wild nature" (Higham, 1998; Somers, 2008:197). 'Wilderness areas' denote opportunities for solitude and connecting with wild nature in undeveloped settings *(ii)*. For a number of respondents it is, therefore, simply a visitor management tool *(iii)*.

(i) *"The objective of wilderness areas is to provide wilderness recreation opportunities by preserving large tracts of wild land in their natural condition, free of human facilities and other impacts" (NZ4)*

(ii) *" […] people can go and have an expectation of little or no sign of humans; that is all it means." (NZ4)*

(iii) *"[…] wilderness areas are just really about limiting visitor impacts I suppose […] it is very much about statutory land management, that is all it means really" (NZ4)*

With a strong recreational mandate, NZ's wilderness framework has a clear landscape emphasis. Where wilderness is an experiential landscape character, all prohibitions are straight-forwardly concerned with retaining the primitive quality of the landscape, e.g. by restricting aircraft access, limiting the development of structures or managing human presence through permitting systems *(i)* (Molloy & Reedy, 2001; Shultis, 2001).

[4] New Zealand's Government agency responsible for managing New Zealand's public conservation land.

(i) *"There are also no tracks or huts in them. You can't fly into them. You can't run guided services on them […] they are set aside in a legislative sense" (NZ1)*

However, as Cessford and Reedy (2000:188) point out, "[…] despite this recreational basis for assigning wilderness values, the actual specification of wilderness criteria has been driven by preservation-oriented attitudes to conservation" *(i)*. NZ wilderness is therefore a place of protection for land with minimal signs of human interference and natural conditions, as opposed to the living metaphysical ideal it is in the US (Shultis, 2001). By perpetuating natural conditions NZ wilderness is an historic model, the land as it was *(ii)* (Bade, 2011).

(i) *"Wilderness areas offer the best examples of natural character, and preserving that natural character is central to its designation as wilderness" (NZ4)*
(ii) *"DOC are pretty focused on the theory of returning landscapes to how they would have been before New Zealand was colonised" (NZ3)*

Natural conditions are tantamount to ecological integrity in NZ wilderness (Cessford & Reedy, 2000). Indigenous natural resources and biodiversity concerns are therefore prominent in their wilderness discourse. Any discussion of New Zealand's conservation lands must be prefaced with the significance of biosecurity to their conservation efforts. With high endemism (e.g. 80% of native vegetation *(NZ4)*) due to the country's biogeographical isolation, DOC takes its responsibility for species protection very seriously *(i)* (Shultis, 2001). This is evidenced in its enduring, and uncompromising, ambition to eradicate non-native species, preserve native species and restore missing species. Native ecological restoration and regeneration is NZ's conservation priority *(ii)*, and this extends to its wilderness areas *(iii)*. However, with its distinct recreational and landscape emphasis, NZ's 'wilderness agenda' is clearly distinct from its 'native biodiversity agenda'. In fact, Molloy (2001) argues that only modest progress has been made in wilderness protection since the inception of its Wilderness Policy because notions of wilderness and recreation have been considered less important than the mandate to conserve indigenous ecosystems. This preoccupation with biodiversity is certainly evidenced in these discussions *(iv)*.

(i) *"[…] in New Zealand only 4 million people are looking after scores of birds which are all on the UN endangered lists" (NZ1)*
(ii) *"[…] trying to preserve ninety-five percent integrity of that particular landscape" (NZ3)*
(iii) *"DOC is all about ecological restoration, whether it is wilderness or not" (NZ4)*
(iv) *"DOC's focus in very much about native species […] we have a high percentage of them that are both endemic and highly threatened. It has to be our focus" (NZ4)*

Box 5.2: New Zealand's Wilderness Framework Summary

'Wilderness' denotes a recreational designation associated with a set of biophysical conditions which induce a particular experience. It is a tool for protecting landscapes in which there are no visitor facilities, such as huts, roads or bridges, where protecting the 'natural quiet' for the provision of the wilderness experience is paramount (Molloy & Reedy, 2001). While preserving the natural state of wilderness is important, this is primarily for wilderness experience (Cessford & Reedy, 2000). Although wilderness areas are primarily recreationally oriented, their preservation has real conservation benefits. Wilderness is a place of "preservation, protection [but] not production" (Barr, 2001:17).

5.2.3 *The cultural/social wilderness: Europe*

"Wilderness in Europe is a concept many do not recognise" (PAN Parks, 2009:8). The continent's cultural landscapes do not conjure up visions of vast, untrammelled wildernesses such as those described in the US, or unparalleled wilderness recreation like NZ. However, as in Scotland, fragments of 'wildness' have survived Europe's intensive agricultural and industrial history, and "awareness of wild nature and the potential for wilderness protection [is] increasing" (Martin *et al.*, 2008:34). In this respect, understanding the European wilderness framework is more complicated than in the US and New Zealand due to the challenge of defining an emerging concept, not to mention the fact that differences between countries within Europe can sometimes be almost as great as across continents *(i)*.[5] In accordance with different qualifying criteria, Europe's wilderness credentials vary *(ii)*. Europe is still trying to understand its own wilderness resource *(EU6)*, as is shown by significant wild land mapping efforts (see Fritz, 2001; Carver & Fisher 2010; Carver & Fisher, 2011) which have contributed greatly to the establishment of a Wilderness Quality Index for Europe (Fisher *et al.*, 2010).

(i) *"I wouldn't even say there is a European conception of wilderness because the problem in Europe is that we have fifty nations […] we all have different criteria and different interpretations of wilderness" (EU9)*

(ii) *"Norway is perceived as a really wild country but if you really strictly try to use wilderness definitions in Norway then they don't have one hectare of it because they have hunting, or the reindeer herding" (EU9)*

Whereas legislative definitions of wilderness emerged as paramount in US and NZ wilderness conceptions, in Europe only Finland has law enabling the creation of wilderness protected areas (Martin *et al.*, 2008). Nomothetic definitions of wilderness associated with US policy are typically absent in Europe. However, while wilderness

[5] This said, despite the very different natural heritage and cultures within European countries, their shared history of development and industrialisation arguably results in a unified wilderness context *(EU8)*.

might not represent a separate protected area, it is a key criterion for establishing new protected areas *(EU9)*; "…wilderness management approaches […] play a crucial role in the management of protected areas in Europe" (PAN Parks, 2009:4). Therefore, while 'wilderness' terminology might not always be employed, conservationists in Europe continue to learn from the North American experience, recognising the conservation value of contiguous areas of unmodified land *(i)*. Wilderness conservation is understood to be Europe's effective means for protecting natural habitat types, and protected areas are considered to provide an excellent framework for wilderness protection *(ii)* (PAN Parks, 2009). Consequently, European wilderness should comprise ecological un-fragmented land in its natural condition. Similarly to the US and NZ, therefore, biologically intact areas with complete assemblages of native flora and fauna are important to the European wilderness vision.

(i) *"[…] there are more and more people in Europe who are starting to understand the value of wilderness not only because these lands provide a very specific spiritual value, but also additional biodiversity value" (EU8)*

(ii) *"We would like to build a European Wilderness Network. That is our vision […] Whether this is built into Natura or would be separate from Natura is unknown yet" (EU8)*

While European conceptions of wilderness are greatly influenced by the US *(i)*, they adopt a more anthropocentric position *(ii)*. Wilderness in Europe is conceived as an *opportunity*. Conceptions of wilderness are intrinsically linked to a progressive, innovative way of translating rural decline into an opportunity and bring about renewed purpose. As farming struggles economically, there is a need to rethink opportunities for marginal land *(iii)* (Martin *et al*., 2008). European wilderness is conceived as a model for future sustainability amidst increasing recognition of the failings of subsidised agriculture. It offers potential for nature based tourism to support local rural development *(iv)*, a place of inspiration and retreat from modern life *(v)* and a way of mitigating the effects of climate change through carbon sequestration and flood control *(vi)*. It therefore describes an integrated approach to land management in which strict conservation "ensures the protection of fragile natural values but at the same time offers meaningful ways for humans to enjoy wilderness" (PAN Parks, 2009:4); it comprises a strategic land management option and landscape recovery programme which aims to foster not only resilient ecosystems but also resilient rural economies. European wilderness has a strong "[…] utilitarian perspective, portraying wilderness as habitat that serves humanity in ways that farms, pastures and plantations cannot" (Naeem, 2013:437). It is a sustainable resource.

(i) *"[…] we would like to set up a European Wilderness Preservation System that is inspired by the American wilderness preservation system" (EU9)*

(ii) *"[…] through enterprise development people are interested in this [wilderness] […] we may turn this into an opportunity […] maybe we can turn that [land abandonment] into an economic opportunity for the people who live there" (EU6)*

(iii) *"[…] the subsidy situation is a little uncertain so we need to come up with some new economic tools and opportunities." (EU6)*

(iv) *"there is a second pillar which is bringing people there [into wilderness] and having nature-based tourism in a sustainable way" (EU1)*

(v) *"It is so important that we have these places in the future, not just for nature, but for people too" (EU7)*

(vi) *"[…] wilderness provides very unique ecological services […] they are much more important than the services offered by actively managed landscapes" (EU8)*

In fact, in parts of Europe (notably Scandinavia) traditional subsistence relationships with the land are a defining component of 'wilderness' *(i)*. Wilderness areas "protect large areas still largely unaffected by human activity, protect the culture and the way of life of the Sami people and develop a diversified use of nature" (de Klemm, 1999:10). Similarly to the US and NZ, European wilderness is founded upon primitivism, but in the sense of preserving an ancient sense of dependency on the land as opposed to an early stage of landscape evolution *(ii)*. In this respect, European wilderness is more than strict nature conservation or recreational experience. It is about the history and practices which bring meaning to that landscape *(iii)*.

(i) *"It [wilderness] is to do with rights of traditional land-use, of Sami people" (EU4)*

(ii) *"[…] reindeer herds and Sami people herding them in these wilderness places is seen as an ancient cultural way of living […] there is never a brutal non-wildness to that" (EU1)*

(iii) *"[...] so it [wilderness] is not protecting the nature purely – you can also use the nature in a sustainable way as has traditionally been done in Finland" (EU5)*

The 'sustainable business model' perspective is not ubiquitous across Europe. More fundamentalist wilderness advocates, such as PAN Parks (Chapt.2), contend that no extractive uses should be permitted in wilderness, asserting that the experiential, spiritual quality of the European wilderness framework is essential in response to increasing urbanisation. Despite the emphasis on wilderness as a resource, there is evidently a spiritual *(i)*, moral *(ii)* and bequest *(iii)* value to European wilderness. The motivation for wilderness is not simply utilitarian *(iv)*; European wilderness has a mythic character (Lupp *et al*., 2011).

(i) *"[…] wilderness is not about the observation of wildlife […] but the feeling" (EU8)*

(ii) *"[…] because 5% of Europe is covered by artificial surfaces we say that there is a moral obligation to have 5% of complete natural processes" (EU9)*

(iii) *"[…] behind wilderness there is always an ethical argument […] you have an obligation to leave nature behind for future generations" (EU9)*

(iv) *"[…] we would never use terms like 'financial argument', but […]it makes economic sense, especially now there is an economic crisis" (EU9)*

Box 5.3: Northern Europe's* Wilderness Framework Summary

European wilderness thinking is in its infancy. With such diversity of cultures and nations – many of which have no directly translatable word for 'wilderness' (Washington, 2007) - wilderness conceptions are broad, holistic, distinctly pragmatic and quite poorly constrained. European wilderness is conceived in many different ways. It is a multidimensional concept, consisting of biological and social elements (PAN Parks, 2009) and manifested as a value driven, resource emphasis. Wilderness arguably approximates a 'business model'. It is a vision of sustainability through its provision of a resilient habitat network, ecosystem services, health and well-being and connections to the land's cultural heritage. Unlike the US and New Zealand, European wilderness is more commonly defined in terms of 'potential' (i.e. restoration), as opposed to 'current value'. Such restoration promise presents a tool for halting and reversing biodiversity and habitat loss and rural decline.

*The European data upon which inferences in this chapter are based is broadly Northern European in origin and may be less applicable in Southern Europe.

5.3. Wilderness conceptions as a guide to management and restoration perspectives

'Wilderness' is a well-established part of conservation efforts in protected area systems globally. However, approaches to wilderness management and underlying wilderness philosophies vary considerably from country to country (Henderson, 1992; Kormos, 2008). Conceptions of wilderness have profound implications for practical management strategies employed in wild areas; divergent perspectives on the meaning of wilderness result in radically different management positions. This section explores the influence of wilderness philosophies on practical management and restoration strategies across the three regions.

When defined legislatively wilderness is a nomothetic term with management implications. Accordingly, the literature on specific management practices in wilderness is extensive (Table 5.2). The focus here, however, is on dominant wilderness axioms and their interaction with underlying management perspectives.

Practical management area	*Example practice*	*Literature signpost*
Prohibiting actions and activities	• *Restricting and licensing commercial activities* • *Prohibiting incompatible extractive uses*	*Kormos (2008)*
Planning restriction	• *Prohibiting development of huts, tracks, route markers, bridges*	*Gorte (2009)*
Nature conservation	• *Non-native species control* • *Habitat creation and enhancement* •	*Roland et al (2001)*
Fire and water management	• *Employing fire by prescription* • *Managing fuel loads*	*Keane et al (2006)*
Recreation and Visitor management	• *Regulating access through permitting* • *Restricting recreational provisions*	*Cessford & Dingwall, (2001a)*
Historical and archaeological resource management	• *Protecting cultural resources* • *Providing visitor interpretation on historical sites*	*Cowley et al (2012)*
Scientific research and monitoring	• *Establishing current status and trends* • *Analysis of core indicators* • *Radio collaring and tagging*	*Landres et al (2005)*
Interpretation, education & community	• *Using education to encourage visitors to adopt behaviours which are compatible with other wilderness objectives*	*Manning (2003)*

***Table 5.2**: The range of management measures in wilderness.*

5.3.1 Degrees of intervention

5.3.1.1 The non-interventionist position

In popular understandings, wilderness is somewhere where people are only occasional visitors (Lucas, 1990). In the absence of people there can arguably be no 'management'. In common vernacular, therefore, wilderness landscapes are by their very definition those 'unmanaged' parts of earth *(i)* (Throop & Purdom, 2006). 'Wilderness management' is an oxymoronic expression for many respondents, most notably for those in the US where the language of the 'untouched frontier' implies a non-intervention management discourse. US wilderness is undeveloped, untrammelled and thus 'unmanaged' *(US9)*. This non-intervention position is informed by the natural regulation paradigm, which argues for the significance of natural processes in shaping

landscape character and ecological resilience *(ii)*. To this end, the US wilderness is arguably a landscape of strict prohibition *(iii)*, most notably of mechanisation *(iv)*. US Wilderness Areas are set aside to "[…] let it [the land] be what it is and what it has always been" *(US2)*. Wilderness "[…] is not a zoo, a garden or a ranch" *(US5)*; it is self-willed, untrammelled nature *(v)*.

(i)	*"Wilderness should be unmanaged. It is about showing restraint and trusting nature; not management" (US11)*
(ii)	*"[…] there's a moose stuck in a mud hole but no, you can't throw a lasso round its antlers and pull it out of there because you're afraid that the visitors will see it getting chewed by a grizzly bear, because we are supposed to leave it natural and that happened naturally" (US5)*
(iii)	*"Wilderness is the land of 'no'. You can't do this, you can't do that." (US10)*
(iv)	*"[…]they cannot build roads, they cannot allow helicopter flights or aircraft landings. Even if they have to clear a trail they use hand saws" (US2).*
(v)	*"...we're not going to build a giant fence around [wilderness] […] we are not going to plant seeds in the ground, water them and harvest what comes up – that is a garden" (US5)*

The non-intervention position was equally advocated by a number of European respondents, but is typically driven by the search for a sustainable, cost effective management model *(i)*. The current abandonment of European farmland presents a unique opportunity for "assisting [the] natural regeneration of forests and other natural habitats through passive management approaches" (Navarro & Pereira, 2012:901). While non-intervention in the US is driven by the 'untrammelled' axiom, it also accords with the 'unmodified/undeveloped' axiom. Where wilderness is a pristine utopia, any visible evidence of intervention subtracts from wilderness value *(ii)*. Contrastingly, in Europe's model of sustainability, making wilderness accessible to people through the provision of sensitive infrastructure is not deemed detracting *(iii)*. Consequently, 'doing nothing' is not an appropriate interpretation of non-intervention in Europe's pragmatic discourses. Non-intervention simply describes reducing management measures in the field while placing more emphasis on supporting activities (i.e. education, interpretation) and working with local business to minimise the effects of tourism while maximising socio-economic benefits. While non-intervention in Europe is often discussed as a cost-effective, sustainable alternative to managed landscapes, for some respondents (e.g. NGO organisation PAN Parks), the 'hands off' approach is equally motivated by reverence for the land and the non-material value of autonomous nature, as in the US *(iv)*.

(i) *"We over manage nature, to the extent that we cannot pay for it any longer, so I think by default there is a need to look at systems which manage themselves" (EU6)*

(ii) *"A cabin or structure of some kind certainly detracts from the sense of primitivism and sense of being unmanaged" (US1)*

(iii) *"There are basically two exceptions or examples of where we accept human interventions: there's the experience, tourism […] even roads can be built, trails, to provide the possibility for experience, and then wilderness restoration" (EU8)*

(iv) *"[…] ecologists and conservationists see it [the value of non-intervention] as biodiversity but they sell it outside as ecosystem services" (EU7)*

Ecocentric sentiment in wilderness frameworks therefore correlates positively with the non-intervention position. The predominance of ecocentric axioms in the US wilderness philosophy (and Europe to a lesser extent) results in a management position founded upon human humility and restraint. Wilderness is "[…] managed as to be left unmanaged" (Zanhiser, 1956:37). The veins of deep ecology run deep in the US wilderness framing; there is an inherent value to nature beyond its utility to society (Rolston, 1991). The untrammelled frontier perspective in the US suggests that the natural world is in harmonious balance and that human intervention can only be destructive *(i)*. The US Wilderness Act is the ultimate "Rights of Nature Act" *(US11)*. Similarly, amongst the purists in Europe, wilderness is first and foremost a natural system, and only after that can the subsidiary axioms of recreation and tourism be explored *(ii)*.

(i) *"The Wilderness Act was a statement of restraint for human humility […]. We need to learn to trust nature" (US11)*

(ii) *"[…] the first principle is that every business [involved in recreational activity in wilderness] should bring back funding and revenues to go back into nature" (EU6)*

5.3.1.2 The interventionist position

As Section 5.2 illustrates, wilderness is considered to be more than simply land which is exempt from human manipulation. Across international wilderness frameworks wilderness is also assigned a range of different biophysical characteristics. While hands-off management is consistent with many of these other axioms (e.g. unmodified, undeveloped, remote) this is neither here nor there for some respondents who do not believe wilderness to be defined through its management regime, but by the endpoint – the product – instead *(i)* (Section 5.5.2). Despite its significance for American and

European respondents, wilderness is far from simply synonymous with non-intervention *(ii)*.

> *(i)* *"I am not sure I would define wilderness as a lack of human intervention […] lack of intervention was perceived to be consistent with those things [the original motivations of the wilderness idea] but I think it was largely places without mechanical transport that didn't develop. Whether you intervened or not was really not talked about very much"*
>
> *(ii)* *"[…] if you asked agency managers to define wildness only some of them would associate it with the kind of non-interventionist hands off approach" (US8)*

Beyond the untrammelled mandate, US wilderness equates to places in which natural conditions prevail. Maintaining the integrity of basic ecological processes and species composition is a management imperative *(i)* (Lucas, 1973). Despite the conceptual minefield surrounding 'naturalness', in the US it most commonly describes 'pristine' conditions which would have existed in the absence of post-aboriginal humans *(ii)* (Cole, 1996; 2000a). Wilderness is therefore expected to provide baseline examples of natural pre-disturbance conditions (Cole, 1996; Lucas, 1973; Noss, 1991). However, in reality, most wildernesses are not pristine sanctuaries for untouched nature. They have human histories (Chapt.2). In US wilderness, fishless ecosystems have been stocked (and continue to be so in many instances) *(iii)*, elk populations culled, fire regimes suppressed (Barrett, 1988; Baker, 1992) and minerals mined (Toffenetti, 1985). These practices have had vast, unnatural ecological consequences, which, when coupled with today's narrative of rapid environment change, means 'natural conditions' are elusive. Interventionist – often restorative – action is therefore necessary if historical assemblages of species and ecosystem processes, and a semblance of naturalness, are to be retained (Fig.5.1). 'Natural conditions' no longer prevail 'naturally' in many wildlands *(iv)*; they must be "preserved or improved, for example, by controlling or removing non-indigenous species or restoring ecological processes" (NPS, 2012:4). Despite America's natural regulation paradigm, and the prominence of this unmanaged conception in academic literature (Coughenour & Singer, 1996; Cole, 2000a; Landres, 2010) (particularly in British portrayals of US wilderness (Fisher, 2010)), many highly interventionist practices, largely associated with a species specific emphasis and guided by a historical range of variability management guide (Landres *et al.*, 1999; Sydoriak *et al.*, 2000), were cited in US wilderness *(v)*.

(i) *"[…] we don't actively manage our wilderness, but on the other hand [...] there's a part [in the Wilderness Act] about where resources and natural ecological processes occur" (US2)*

(ii) *"it is wild if it looks like it used to before Lewis and Clarke were here" (US8)*

(iii) *"[…] they [wilderness managers] certainly stock fish all the time and put fish into lakes that were fishless historically" (US8)*

(iv) *"[…] a long history of fire suppression [has resulted in an] unnatural fire load. This means that if a fire went through it would burn incredibly hot, much more severely than normally and this would steralise the soils" (US11)*

(v) *"[wilderness managers are] doing prescribed burns where managers either go in with drip torches and light fires or helicopters go over with what we call ping pong balls – ignition balls"(US8)*

Figure 5.1*: A cone cage to protect the seeds of this whitebark pine tree; an example of interventionist practices in wilderness. The seeds will be cultivated in a nursery and planted in an effort to ensure the survival of whitebark pine as its extent is shrinking under the pressure of climate change and an invasive pine beetle. (see Appendix VI for whitebark pine case study). Photo © Holly Deary.*

Highly interventionist management also takes place in New Zealand wilderness *(i)*. Their 'natural conditions' axiom means that they too are familiar with the perspective that wilderness is degraded by the loss of indigenous species (Shultis, 2001). Therefore, with such acute endemism, management control is seen as imperative; non-intervention is anathema to New Zealand's wilderness managers *(ii)*. Conservation managers are too absorbed by the practical reality of their critical biodiversity rescue mission to consider the abstract, philosophical significance of their interventions *(iii)*. The current, very real, threat to biodiversity and ecological integrity presents a management trump card, "as opposed to worrying about wilderness or something" *(NZ2)*. Although "wilderness is managed to be remote from people and their effects, it is not remote from this [non-native species] ecological pressure" (Cessford & Reedy, 2000:188). From a conservation management perspective, wilderness is not distinguished from any other form of protected area (Cessford, 2001; Cessford & Dingwall, 2001b). If ecological priorities require, DOC will allow activities which are prohibited in wilderness to occur (e.g. aircraft access). Wilderness proscriptions are waived where there is a discernible

benefit to nature conservation *(iv)*. The management perspective in NZ wilderness is consequently highly interventionist *(v)*, reactive and mission oriented *(vi)*, contrasting with the US – and Europe in some instances – where the abstract value of pristine, untamed wilderness is important.

(i) *"[we use] 1080, which is basically a poison used to kill stoats and possums and rats across large areas, using helicopters to spread the bait" (NZ4)*

(ii) *"No-one would say in New Zealand that a hands-off approach would work [...] if we just leave it we are screwed" (NZ2)*

(iii) *"[...] most of the problems in New Zealand around species are so acute that you are just scrambling to stop them going extinct. […] We don't have the option to debate whether or not to manage these areas or not" (NZ4)*

(iv) *"[…] we can exert as much influence as we like on the ecological restoration side of it in a wilderness" (NZ4)*

(v) *"[People] quite often say that in New Zealand conservation is basically killing shit, and that is what it is really" (NZ4)*

(vi) *"[…] most of our work is threat based. […] identify threats and deal with them" (NZ2)*

Beyond this pragmatism there is a more conceptual rationale for New Zealand's ease with management in wilderness. As Section 5.2.2 shows, wilderness in New Zealand is largely a recreational label and thus only has management implications for those activities and artefacts which may degrade the 'wilderness experience' *(i)*. Antipodean conceptions of wilderness imply remoteness, size and naturalness, but within this recreational framework naturalness is typically understood to mean 'apparent naturalness' in terms of the degree to which the natural environment is free from the presence of permanent structures (Machado, 2004). Therefore, while the "management setting [of wilderness] requires there to be no discernible management presence", exceptions for specific environmental management tasks are permissible if they are "temporary and unobtrusive" (Cessford & Dingwall, 2001a:37). The recreational landscape emphasis in New Zealand contrasts with the philosophical, existential value of US wilderness, placing the management emphasis on 'what it appears/what is visible' as opposed to 'what is'. This landscape aesthetics perspective is not compromised by intervention, unlike the ideological roots of an untouched frontier.[6]

(i) *The term wilderness is ecologically meaningless […] it is a recreational designation […] people can go and have an expectation of little, or no, sign of humans. That is all it means" (NZ4)*

[6] Despite the more idealistic foundations of the US wilderness framework, from this recreational landscape perspective New Zealand wilderness is actually more stringently defined as an area where there are no huts than is the case in the US (Barr, 2001; Shultis, 2001).

Where wilderness is simply a recreational designation it has no ecological meaning. It is simply an overlay designation which recognises distinct qualities within public conservation lands. Consequently, this label has no implications for practical land management strategies; it only has implications for the management of people in such places *(i)*. This is not to imply that in some instances – with its intrinsic limitation on human impacts – wilderness cannot act as a conservation tool *(ii)*, but simply that traditional conservation measures can be taken in wilderness. While in the US and Europe a fundamental axiom of wilderness is nature conservation oriented, in New Zealand "Wilderness is […] principally a recreational and cultural concept which is compatible with nature conservation" (Wilderness Advisory Group, 1985).

(i) *"[…] there are pretty strict regulations for people in wilderness" (NZ3)*
(ii) *"[…] we've got wilderness areas which have […] closed areas specifically around species recovery" (NZ3)*

Although in Europe, high profile wilderness foundation PAN Parks advocated non-intervention, this is not the position of all European wilderness managers. The more fragmented, humanised nature of European wildlands affords a pragmatic subtext to a non-intervention discourse, whereby the need for active restoration is often recognised *(i)*. Different degrees of radicalism and fundamentalism in European perspectives, and multiple different starting points in terms of the degree of degradation the land has undergone, means a wilderness restoration agenda in Europe is associated with different degrees of intervention *(ii)*. "If this is a wilderness there are two ways to get there. One way is PAN Parks […] searching for existing or most protected existing wilderness areas where we need a little bit of kick off [while the other] basically starts with abandoned land [and] is a long, long process" *(EU8)*.

(i) *"[…] sometimes a proactive approach is needed […] the land needs proactively restored […] sometimes non-intervention is not enough" (EU9)*
(ii) *"[…] we are comfortable with both [active and non-intervention approaches] […]rewilding happens using mother nature as a tool, and rewilding also happens if we help mother nature to make some action" (EU8)*

The distinct challenge of wilderness conservation in Europe's more humanised and fragmented wildlands has resulted in zoning as a central management approach It is a tool for managing competing values in wilderness, such as cultural value, socio-economic activity and nature conservation and often involves a spatial approach to defining appropriate degrees of intervention *(i)*. Like NZ, Europe is task focussed; in contrast to America's existential value driven position, Europe's wilderness narratives are a case of 'trial and error' as Europe seeks to understand its wilderness resource, particularly in relation to ideas of sustainable land management *(ii)*.

(i) *"Oulanka [a specific wilderness area] has been founded in three parts, and all the three parts have different hunting restrictions" (EU5)*

(ii) *"[…] we are just starting out and testing new ideas" (EU2)*

5.3.2 Conflicting mandates

The above discussion has exposed the tension between practical management perspectives which is engendered by the fact that wilderness frameworks are conceived around multiple – sometimes conflicting – axioms. These conflicting wilderness goals, and implicit management approaches, are summarised in Table 5.3.

Wilderness axiom	*A vision for the future....*	*Key management axioms...*	*Illustrative quote...*
The utopian, primitive wilds	Maintain/restore natural conditions and unmodified	• Maintain no discernible sign of human influence • Retain undeveloped character	*"[…] the wilderness should feel primitive so we ensuring little discernible evidence of human presence and artefacts and the like is really important" (NZ5)*
Wilderness as self-willed (untrammelled)	Autonomous nature	• Minimal intervention • Avoid intentional management manipulation	*"Since then [the Leopold Act] we've been striving much more towards natural ecosystem processes; the leave alone type policy" (US2)*
Wilderness as naturalness	Ecological integrity and preservation of natural, or pristine conditions	• Restorative and protectionist (often species & habitat specific) practices	*"[...] you can mechanically go in and remove some trees and that will help put the forest back on more of a trajectory to a more natural ecosystem" (US7)*
Wilderness as ecologically intact and functioning	Cores, carnivores, connectivity and ecological restoration	• Co-operative management at a landscape scale • Restoration of ecological integrity	*"[...] the purpose ecologically was to link the big Bob Marshall [wilderness area] with the wild country of Glacier National Park and kind of create stronger continuity between these big wilderness landscapes" (US1)*
Wilderness as resilient	Adaptive management and co-operative capacity	• Landscape scale evidence based management • Action research	*"[…] there's an acknowledgement that there are so many changes occurring right now […] because of the changing environment, and so resilience is the most important thing" (EU5)*
Wilderness as adventure	Recreational sanctuary	• Protect and restore landscape aesthetics • Provision of opportunities for use	*"[…] the safeguarding non-motorised, quiet recreation" (US8)*

Table 5.3*: Different management positions as the result of different ways of conceiving wilderness.*

The multi-dimensional nature of wilderness frameworks, founded upon different wilderness axioms, means that conflicting mandates with contradictory goals and management perspectives co-exist in international wilderness settings (Sydoriak *et al*., 2000). Nowhere is this more explicit than in the US, where wilderness is expected to be an exemplar of primitive, natural conditions, but simultaneously untrammelled by human actions *(i)*. As Ridder (2007a: 8) summarises, "it is now understood that without active manipulation, natural areas are unlikely to conform to benchmarks of naturalness".

(i) *"[…] the Wilderness Act isn't the only policy which applies to wilderness. We have to meet the requirements of other things, like the National Parks Service Organic Act which states the importance of natural abundance and diversity and ecological integrity and all that too" (US6)*

US "wilderness should be a reservoir of native plants and fish […] but what about when it isn't?" *(US1)*. In the early days of the US National Park and Wilderness movements there was an assumption that protecting landscapes would be enough to sustain them in perpetuity; that 'naturalness' was largely equivalent to 'untrammelled'. Under current environmental conditions this is no longer the case (Aplet & Cole, 2010; Tweed, 2010a). In light of unprecedented environmental change, non-intervention can no longer deliver multiple objectives; preserving natural conditions today necessitates human intervention *(i)*, which is inconsistent with the untrammelled mandate of maintaining natural processes *(ii)*. It is increasingly apparent that "[…] simultaneously wild and scientifically managed fauna is a contradiction in terms, a logical and managerial impossibility" (Rolston, 1990:244) *(iii)*.

(i) *"[…] maybe you want to make all these heroic efforts to preserve certain species […] and that would mean very actively intervening and you would lose the sort of self-directed, self-evolving, self-willed ecosystem in favour of the biodiversity conservation" (US8)*

(ii) *"[…] if you want to have a hands off non-interventionist approach you have to accept that there will be some extinctions, that your ecosystem may look very different than it did in the past, that you may lose some of the things that you value" (US10)*

(iii) *"[...] we have thought for so long that we could leave it all alone and get all the things we wanted [....] the native species, the historic fidelity, the sense of wildness" (US8)*

The US Wilderness Act is consequently "a more flexible Act than it is understood to be" *(US1)* in that "Congress writes the law and the agencies are supposed to write the rules for administering that" *(US11)*, but they interpret the relative value of conflicting mandates radically differently. While some believe that despite the fact that the

"ecosystem may look very different than it did in the past [you should be] placing your priority value on not intervening" *(US8)*, others will argue, like Foreman (1998b) does, that the restoration of natural ecological conditions (e.g. the reintroduction of wolves) is consistent with designated wilderness. "The wilderness act has enough loopholes in it that people can do whatever they want" *(US10)*.

Wilderness Value	*Wilderness Act Management Mandate*	*Current management paradigm*
'Untrammelled' • **Protect natural ecosystems**	Avoid intentional ecological manipulation	Non-intervention
'Natural' • **Scientific reference areas and baselines**	Preserve natural/pristine conditions	Intervention
'Primitive recreation' • **Opportunities for wilderness experience**	Provide opportunities for recreation and use	Intervention

Table 5.4*: Wilderness values and management matrix for the US (Cole, 1996; Landres et al., 2000a).*

Conflicting mandates result in unclear restoration and stewardship targets *(i)*. Some respondents "want to maximize restoration, rather than settle for a compromised nature" (Rolston, 1990:244), while others believe only wilderness can restore itself *(ii)*. Although some US respondents assert that non-intervention is degrading the wilderness resource, others view the commonly cited manipulation of wilderness as an "on-going violation of wilderness law" *(US11)*. The operational challenges implicit in the internally inconsistent US Wilderness Act are monumental because, in practice, "[…] it is not entirely clear what is illegal in wilderness" *(US8) (iii)*. Within a legislative framework which provides no indication of the relative importance of opposing wilderness values *(iv)* land managers face some extremely difficult value decisions (Hendee & Stankey, 1973). As environmental change intensifies, managers are faced with a difficult choice between restoring pristine conditions or avoiding conscious ecosystem manipulation (Cole, 1996).

(i) *"Many people think wilderness areas are 'native landscapes', but they are not necessarily. Wilderness is about wild nature" (US11)*

(ii) *"[…]trust nature and accept that wilderness can restore itself, not us" (US11)*

(iii) *[…]they are spraying weeds [in the Bob Marshall Wilderness] […]it is unclear to me; I don't think that that has been sorted out legally […] are those actions illegal or not?" (US8)*

(iv) *"I think it is tricky because legally the untrammelled quality and the natural quality we recognise on the same footing" (US6)*

A further management paradox identified across all three continents concerns the 'recreation v. protection' dilemma, i.e. the tension between the primitive, remote, preservation value of wilderness and the recreational value (Cole, 2003). Preserving biophysical conditions, for instance, is not always in harmony with 'use and enjoyment'. The challenge of striking this balance is evidenced through the many references to permitting systems and specific visitor management restrictions which are designed to create space and minimise impacts *(i)* (Freitag-Ronaldson *et al.*, 2003). However, dogmatic permitting systems were described by some as being antipathetic to the self-willed wilderness experience sought by recreationalists *(ii)*. The antithetical nature of such a systematic approach applied in wilderness is similarly encapsulated by the resource provisions provided in wilderness areas, for instance cleared trails, way marking and food poles in campsites.[7]

(i) *"[...] we're a bit schizophrenic [because] we want to concentrate the activity there [in already 'trammelled' areas, e.g. where there are boardwalks]. However, we also basically tell visitors that if they're not getting […] into the backcountry then they are not really experiencing the park" (US3)*

(ii) *"[…] designated sites....that's a turn off for some people" (US4)*

In all three continents, tension has emerged out of the fact that wilderness is ultimately only one player at the table, and the 'wilderness hand' comprises a number of different 'options for play'. Friskics (2008) details the lack of clear distinction between different movements in US conservation lands, noting that the Wilderness and National Parks mandates are readily confused making the restoration debate a labyrinth discussion as wilderness and non-wilderness agendas are confounded and conflated *(i)*.

(i) *I think wilderness is a smaller player at the table […] even within wilderness, untrammelled is just one aspect of what wilderness means" (US6)*

5.3.3 Management priorities

While wilderness quality is a holistic notion, determined by the sum of these distinct axioms *(i)*, in reality "these qualities are sometimes at odds" *(US6)* and practical prioritisation guidelines are needed. Table 5.5 summarises the way in which different wilderness values are privileged within different wilderness frameworks.

(i) *"[…] the idea is that the whole is greater than the sum of the parts and so there is a recognition that it is not just about the natural quality[…], the solitude or opportunities for primitive and unconfined recreation […] we are teasing these things apart to make it more manageable, but the idea is that when you have everything combined that is the goal" (US6)*

	Management Priority	*Illustrative Quote*
America	<u>Natural conditions: balancing preservation and restoration</u> • Ecosystem health commonly superseding non-intervention as dominant value) • Polarised, conflicting mandates	*"[...] if there is a species that we can protect, as in there is a practical chance of succeeding, and that is the only place that it is going to thrive then I would rather violate the wilderness law - which is abstract and philosophical – and preserve the species" (US10)* *"[...] it's very important that you understand that sensitivity about wilderness and that we won't overly trammel [...] in order to accomplish certain objectives. But, […] there are times when we have to, to manage these ecological processes and try and restore what was probably there before" (US2)*
New Zealand	<u>Ecological integrity: interventionist</u> • Pragmatism • Task-focussed	*"[…] basically, if we need to go over to a wilderness area and control possums we can […] we can do what we need to for management purposes, and that is the key to it probably, that it is for management purposes." (NZ4)* *"[…] it goes back to that threat based approach; this is what we want, here's the threat to it, can we deal with it?" (NZ2)*
Europe	<u>Sustainability: context specific management perspective</u> • Prioritising healthy ecosystems; minimising effects of tourism; maximising socio-economic benefits	*"[…] healthy, resilient ecosystems moving forward is what is important and how we get there will be specific to that situation […] whether that means simply letting natural processes prevail or whether that means actively restoring them" (EU9)* *"[…] but for wilderness to be relevant in Europe you need to be pragmatic about the place of tourism and the place of certain traditional practices which are important to the history of that area" (EU7)*

Table 5.5*: The 'management trumps' - as in the wilderness mandate which outranks all others when conflict arises - associated with each international wilderness management discourses.*

Box 5.4: Section Summary

Wilderness management positions are a function of how wilderness is conceived. Management positions are legitimised through different narratives of what wilderness is, and how its qualities might be preserved, conserved and restored. Consequently, different conceptions of wilderness have major implications for management approaches and restoration emphases in wilderness. The dilemma is that the multi-faceted nature of international wilderness frameworks means "[…] that there is so much room for interpretation of all of the parameters around managing wilderness" *(US3)*

5.4 Restoration agendas in wilderness

It is clear from the above that there is growing recognition of the need for manipulative action in retaining certain wilderness values, notably natural conditions. But, given the debate surrounding management intervention in wilderness, to what extent are international wilderness management frameworks compatible with notions of 'wilderness restoration'?

5.4.1 Restoration or Stewardship?

As an inherently manipulative practice, restoration is a difficult concept to reconcile with a self-willed conception of wildernesses. Conflicting mandates which urge incongruous degrees of intervention, prompt an – albeit largely semantic – tension between 'restoration' and 'stewardship' *(i)*. In the US, the natural regulation paradigm means manipulative restoration arguably degrades wilderness quality further. From this 'untrammelled' perspective, true wilderness restoration necessitates restoring land managers' faith in nature's own healing capacity by demonstrating humility and restraint *(ii)*, not further management intervention.

(i) *"[…] our task, legally, is to preserve wilderness character and I think different agencies take that a little differently as to whether that means preserve and improve or to preserve the status quo" (US6)*

(ii) *"Wilderness isn't about single species management. It is about letting nature do its thing [therefore restoring wilderness necessitates] simply modifying behaviour rather than modifying 'wilderness'" (US11)*

This said, a number of US respondents described a recent shift away from 'hands-off' protection towards "a paradigm where we can start doing actual restoration in our wilderness" *(US2)*. While restoration often necessitates a violation of wilderness law, this is considered worthwhile due to the long-term gain to wilderness quality *(i)*. Because 'preserving naturalness' is so central to the Wilderness Act, for many

respondents "putting in great big water tanks for big horn sheep [is] okay because it's in line with the Wilderness Act and preserving natural conditions" *(US11)*. Despite the conception of US wilderness as untouched "land beyond the frontier" (Hall, 2002a:284), in reality, designated wilderness requires at least some restoration action (Ulvi, 2001).

(i) *"[The wolf reintroduction] from an ecological resources and natural resource processes perspective was good for our wilderness, but it did take a few helicopter flights, it took building some pens in our back country" (US3).*

The relationship between wilderness and ecological restoration is complex, the nature and implications of which are teased apart in later chapters (and explored in detail by Graber, 2003). However, for the purposes of this chapter, it has emerged that wilderness, in the legal sense, can be an extremely restrictive and obstructive instrument *(i)*. For instance, in the US while there may be a strong case for restoring whitebark pine, wilderness law is a restricting factor (Appendix VI). In fact, one of the greatest prospective uncertainties facing wilderness management is how designated wilderness will interact with the current move towards extensive ecological restoration in conservation lands (Cole, 2003). While during these discussions a number of complex, abstract concepts emerged, such as 'remedial interventions' *(ii)* and 'double trammelling' *(iii)*, these philosophical paradoxes are explored alongside those quandaries identified in Scotland in Chapter 7. For now, however, despite the conceptual challenge of ecological restoration *in* designated wilderness, it is evident that even in America, with its more purist mind-set, land can be restored *to* designated wilderness quality *(iv)*.

(i) *"I have sometimes wondered whether if it was just a National Park and we just followed our non-wilderness policies, didn't think about wilderness, if we would be just as well off...if not better. I really have" (US3)*

(ii) *"[...] one view is that our systems have been so trammelled already […] trammelling it further by intervening is actually just a temporary trammelling that will result in a more untrammelled thing" (US9)*

(iii) *"[...] we trammelled it when we put the fires out and didn't let them burn, and then if we go in to thin to restore historical conditions then we have done a 'double trammel'[...] so does it make it okay?" (US8)*

(iv) *"From a legal perspective Fire Island wilderness, which has been completely restored [because it was once "developed with houses"] – ecologically restored – is as legally wilderness as North West Alaska" (US6)*

Whether restoration enhances or degrades wilderness quality is clearly a circuitous debate, but ultimately all three study regions are – to one extent or another – taking manipulative action to restore one or more aspects of wilderness character. As such,

some shared axioms of wilderness restoration aspirations have thus emerged; e.g. scale, natural process, restoring balance *(i)*, ecosystem management *(ii)*. However, as a consequence of disparate wilderness conceptions, the nature of such restoration frameworks is equally diverse. Ecological restoration is a broad field (Hobbs & Norton, 1996; Hobbs & Harris, 2001; Hobbs *et al.*, 2009), comprising many sub-disciplines, a number of which were evident during these discussions (Table 5.6).

(i) *"There's a big emphasis on 'restoring balance. You know, the wolf reintroduction is another good example of, in my opinion, a success story. We reintroduced a component of the ecosystem that was not there anymore" (US2)*

(ii) *"[…] the most critical part of this approach is that we are focussed on the ecosystem as a whole" (EU10)*

Branch of ecological restoration	*Explanation*	*Link to wilderness conception*	*Illustrative statement*
Reinstating pre-settlement conditions	• Returning altered ecosystems to previously altered conditions • Recovering pre-human influence landscapes	• Combination of 'untrammelled', 'natural conditions' and 'primitive character' historically resulted in a natural processes emphasis *(US9)* • Unimpaired natural conditions are no longer feasible, hence 'fall-back policy' of maintaining closest approximation of natural conditions is adopted *(US8)* • Increasing significance of ecological resilience and functionality represents steady shift away from the "long-held dream of restoring damaged ecosystems to some pre-industrial condition" (Tweed, 2010b: 80)	*"[…] if we feel that it [intervention] is restoring a pre-existing condition then that is probably our gauge right there. It is not trying to create something that was never there but it is turning it back to an original condition" (US7)* *"[…] there's an acknowledgement that there are so many changes occurring right now between temperature, precipitation, drought frequency, range expansion of native species, colonisation by new invasive species because of the changing environment [...] and so the resilience is the most important thing" (US3)*
Rehabilitation and maintenance of ecological integrity and biodiversity	• Species focused concern for endangered communities	• Guided by values of nativism and ecological integrity, there is inevitably a degree of retrospectivity to their restoration ambition • The 'intactness scale' is New Zealand's greatest barometer for wilderness restoration *(NZ1)*	*"I always take it back to naturalness as ecological integrity, which goes back to this idea of 'is the natural system functioning or not?" (NZ2)* *"[…] everyone thinks it is a point in time that you are aiming for whereas for us it is much more about restoring system processes" (NZ2)*

Branch of ecological restoration	*Explanation*	*Link to wilderness conception*	*Supporting statement*
Ecosystem services	• Aspiration for naturally functioning ecosystems which are regionally specific • Integrated economically viable and competitive 'wilderness enterprises' • Embeddedness within the social and cultural fabric of respective regions	• Using zonation as a tool for incorporating the market value of wildlife and ecotourism model into a large 'wildlife comback' • Restoring abandoned lands to former cultural landscapes in some instances	*"[…] restoring pastures by mowing, so you may be cut trees and then cut the hay and then put the sheep and cows on the land" (EU4)* *"[…] different ideas in different socio-economic land use situations […] to help communities into the future by helping them to bring back wildlife" (EU6)*

***Table 5.6**: Branches of ecological restoration in accordance with wilderness conceptions.*

5.4.2 *International conceptions of rewilding*

Respondents were asked to consider whether they would define their restoration approaches as '*rewilding*'. Most interestingly, 'rewilding' is a term which many practitioners, involved actively in restoration practices in wilderness, have no familiarity with. In New Zealand not a single respondent had encountered the term; in America a negligible number had; and in Europe, although it was a significantly more familiar term, it was still far from prolifically employed. Ironically, despite the fact that the reintroduction of wolves into Yellowstone National Park is frequently used in academic literature as the archetypal example of rewilding (Soule & Noss, 1998; Donlan, 2005; Ripple & Beschta, 2007; Sandom *et al.*, 2013a), within the Park itself this term has no profile *(i)*. Even more astonishingly, despite Europeans drawing much inspiration for rewilding from Yellowstone, and North America more broadly *(ii)*, amongst the limited US respondents who did recognise the term (all of whom had strong academic connections) rewilding is understood to have distinctly European origins, with particularly strong UK connections *(iii)*. Despite Scotland's current efforts to achieve extensive pine regeneration and stable herbivore populations being justified with reference to the successful aspen regeneration in Yellowstone (Chapter 6), in America the domestic roots of this conservation paradigm are largely unrecognised and unacknowledged. This finding exposes an important disconnect between academic perspectives of the weightiness of 'rewilding' to contemporary nature conservation paradigms (Reardon, 2014) and the reality in practice. The following discussion is, therefore, largely based on intuitive inferences associated with respondent's 'best guesses' about the meaning of 'rewilding'. This fieldwork's initial motivation to review rewilding in its trailblazing international context to provide insight into Scotland's rewilding context appears ironic in light of this finding.

(i) *"I'm not even sure I've heard of it […] I'm almost having to think about them [terms lik rewilding] and define them in my own mind" (US3)*

(ii) *"[…] we're really trying to learn from American experiences and move towards a preservation system akin to theirs" (EU8)*

(iii) *"I think it is more of a European, UK, type term" (US4)*

5.4.2.1 *The paradox of 'rewilding wilderness'*

A number of respondents made an intuitive attempt to define rewilding, portraying it to mean 'returning to the wild'. *'Restoring'* wildness is implicit in the term. 'Compromised' and 'degraded' are considered implicit in notions of restoring. Correspondingly, rewilding is generally assumed to resonate with 'unwilded' landscapes; it is understood as only having purchase in the cultural landscapes of

Europe, central Europe most notably, where centuries of human industrialisation and agriculture have resulted in humanised nature. Rewilding is, therefore, considered to have very little application in 'wilderness'; it is redundant and unnecessary in places which are perceived to exhibit a high quality of wildness *(i)*. If rewilding does, indeed, mean 'to make more wild', or to 'restore wildness' *(ii)*, then it has no place in the 'frontier wilderness' of North America *(iii)* or the experientially in-tact wilderness of New Zealand *(iv)*. 'Rewilding wilderness' is nothing short of oxymoronic. An unanticipated, but important, finding is therefore that a wilderness manager's perspective is perhaps of less significance than a city-suburb reserve manager, for instance, in understanding future rewilding efforts. Rather than being the subject of rewilding, wilderness areas – particularly those in North America - provide the benchmark against which rewilding success should be gauged. However, a challenge which emerged during these discussions is that defining the eligibility of a landscape for 'rewilding' necessitates a tacit understanding of the degree to which that landscape has been 'unwilded'. Degrees of wildness are wholly dependent upon the scale of spectrum used to understand wilderness; a number of European land managers consider their landscapes to have retained a high quality of wildness and are thus not 'rewilding candidates' *(v)*. Consequently, European respondents typically consider rewilding to be an appropriate approach for their highly altered, abandoned farming land but not for their nature reserves which are remnant fragments of 'wild nature' in a sea of industrialisation. Disparate perspectives on wildness quality create confusion as to whether rewilding is concerned with the future preservation and protection of intact, functional wilderness or the restoration of currently degraded, unwilded places *(vi)*.

(i) *"[…] our landscape is so wild to begin with – we don't need to rewild it"(US7)*

(ii) *"[rewilding is] taking something that is substantially non-wild, more substantially non-wild than most of our parks and wilderness areas, and making it more like what our [USA] parks and wilderness areas are" (US9)*

(iii) *"[…] it predominantly is pretty wild. I would say it is more like 'keeping it wild'" (US1)*

(iv) *"I suppose for us, because it is a relatively natural landscape, there hasn't been high human impacts on it and so we tend be guided by what is there" (NZ2)*

(v) *"[…] if you were talking to an urban planner the whole concept of rewilding may resonate a lot more with them" (US9)*

(vi) *"[rewilding]kind of implies that you need to make a substantial change […] you need to see a strong level of recovery" (NZ2)*

As wildness is most appropriately represented on a continuum, it seems intuitive that rewilding should equally be understood through degrees *(i)*. It is unsurprising, therefore, that respondents' expressions of rewilding are not absolute or antipodal. Against this continuum perspective the vast, relatively intact wilderness areas can undergo some rewilding, but the more fragmented, degraded landscapes of the UK, for instance, have

further to go *(ii)*. The degree of 'rewilding' desired in a landscape is dependent upon the intensity of 'unwilding' (actual or perceived) that a landscape has been subject to in the past. On the rewilding continuum, the cultural landscapes of Europe represent the greatest potential *(iii)*. Results from the European discussions do largely support suppositions that rewilding is best placed in Europe. Although not commonly used when describing their wilderness agenda, European respondents did employ the term occasionally *(iv)*.

(i) *"[...] somewhere like Tiritiri Matangi […] is different to Stewart Island which is still reasonably in-tact on the in-tactness scale" (NZ2)*

(ii) *"[…] places like the UK and other parts of Europe can improve their wilderness quality – they just have more work to do and further to go than we do in the States" (US9)*

(iii) *"To me it [rewilding] makes great sense as a European concept, or in a place where there is recognition is that you have humanised landscapes or whatever you want to call them, and you're going to rewild them" (US9)*

(iv) *"Although I tend to refer more to 'restoring wilderness values', we are rewilding, and I think rewilding is easier for people to understand" (EU9)*

5.4.2.2 What is rewilding?

Despite on-going assertions that the greatest application for rewilding is in Europe, one respondent believed that the roots of the concept are, in fact, North American *(i)*. Beyond the intuitive descriptions of 'rewilding', *US10* asserted that rewilding is associated with a set of key axioms and thus describes quite a specific conservation paradigm *(ii)* (Chapt.2). In fact, amongst the few US respondents who demonstrated any recognition of the term, there was resounding conformity between their understandings of the concept and the way in which it is presented in the literature (Soule & Noss, 1998) It is a proactive conservation method associated with the reintroduction of keystone species and the establishment of corridor networks *(iii)*, under the aegis of landscape scale conservation *(iv)*. Rewilding in America is firmly rooted in the field of restoration ecology, and is concerned with the restoration of ecological processes by returning habitats to a natural state.[8]

(i) *"I think it [rewilding] really started with the Sky Islands area in the South Western United States [where]islands are disconnected and the wildlife which lives on top of these things can't move around [...] the whole idea of rewilding is trying to get adjacent lands between the valleys to be protected to allow those areas to be rewilded, to reconnect those areas" (US10)*

(ii) *"I can only remember hearing it used in the context of putting some large mammal back […] putting wolves back is rewilding" (US9)*

(iii) *"It's something I've heard used in relation to restoring corridors, whether it is Yellowstone to Yukon or other trans-North American to Canada [networks] (US4)*

(iv) *"[…] so there clearly is an effort on some peoples part to try and rewild the matrix in-between existing parks" (US9)*

Beyond this specific restoration paradigm, rewilding is more generically understood to mean handing land back to nature. It describes the process of "removing contemporary human influence and then […] restoring ecological processes" *(US3)*. However, where rewilding is simply described as a commitment to (re)creating 'self-sustaining ecosystems', as Navarro & Periera (2012) suggest, it elicits a number of nuanced interpretations because this can occur naturally (e.g. through species naturally expanding their native range) (Martin *et al.*, 2008), or with human assistance, through the reinstatement of a keystone species (i.e. large herbivores in Oostvaardersplassen) (Lorimer & Driessen, 2012). Rewilding is sometimes described as an interventionist act of engineering ingenuity *(i)* or a non-interventionist act of faith *(ii)*. Nowhere is this more explicit than in the juxtaposition of two European wildlands NGOs, PAN Parks and Rewilding Europe, who adopt non-interventionist and interventionist management positions respectively, but equally employ 'rewilding' parenthetically at times.

(i)	*"We don't think that it is so hands off. There are gaps in the natural system which we would like to fill because we think biodiversity value is linked to different functions in the system […]. So it is not just leaving the land" (EU6)*
(ii)	*"What we are focussed on is keep your hands off if possible – that would be our preference where realistic" (EU8)*

5.4.2.3 Terminology, labelling and semantics

Despite recognition across all three continents that the archetypal 'cores, corridors and carnivores' understanding of rewilding might be entirely germane to some of their management aspirations *(i)*, the vast majority of respondents concluded that they would simply talk about 'restoration' *(ii)*. 'Rewilding' terminology is considered uncongenial to their restoration effort as there is a political volatility associated with it. In the US in particular, where its origins are associated with a particular extremist wild-lands group *(iii)* - and a contentious sustainability agenda - rewilding is connected with a fundamentalist cohort of society. It is guilty by association *(iv)*. The legacy of conflict between recreationalists/libertarians and radical wilderness conservationists has resulted in public anxiety surrounding strategies for wilderness protection *(v)*. Political savviness therefore emerged as a practical necessity in any wilderness restoration programme. Around the world respondents spoke of the expediency of labelling and speaking the language most likely to engender support *(vi)*. Nowhere is this more explicit than in the State of Montana's recent 'Forest Jobs and Recreation Act' which, under the guise of economic and community sustainability, is unmistakably concerned with protection of wilderness, a socially contentious pill which has been sugared by a more politically acceptable heading *(vii)*. As is described in the European context, 'selling wilderness' by elucidating the range of benefits it can bring is understood to be increasingly central to promoting the wilderness restoration agenda. The political volatility of rewilding' is

broadly viewed as unhelpful in this respect; it is an unnecessarily controversial term *(viii)*.

(i)	*"I think it is just the use of the term. I mean, we are restoring native species, and there's a whole movement with the Yellowstone to Yukon corridor" (US4)*
(ii)	*"[…] the way I would describe it – even though rewilding fits perfectly – would typically just be to call it ecosystem restoration" (US3)*
(iii)	*"[…] it was the 'Earth First!' people [a radical environmental advocacy group] […] all those people were the ones pushing for rewilding" (US10)*
(iv)	*"they [the extremists with who rewilding is associated] are called the tea party fringe [...] and there is this Agenda 21 which is the United Nations thing that we should all live sustainably […] so when you're talking about sustainability it is always 'coming from the UN' and you're inviting the UN to come in and take our country away or something like that" (US7)*
(v)	*"[…] because we're often accused of creating wilderness areas by closing roads in a locked out sense and that is a political pushback that has had some traction" (US1)*
(vi)	*"[...] depends on our audience – what kind of message we have to sell to gain more supporters [...] because it doesn't make sense to talk about biodiversity value to the public, but if you go to the Congress or to the European Union then that is the argument" (EU8)*
(vii)	*" […] the word wilderness doesn't show up in the title, it is called the Forest, Jobs and Recreation Act, but half of it is about protecting wilderness" (US7)*
(viii)	*"[…] we will talk about probably exactly the same thing but we will try to avoid 'rewilding' because we know this pushes people's buttons" (US7)*

Furthermore, ecological restoration and resource management are perceived to be allied with the wisdom of science. The language of conservation science - rather than wilderness – is considered to be far more robust, and socially acceptable *(i)*. This is most notably the case in New Zealand, where the very expression 'rewilding' is considered to be too emotive to represent a strategic conservation approach *(ii)*. Where rewilding might be considered a paragon of idealism *(iii)*, restoration provides the cogency associated with a number of hard and fast, laid out principles and guidelines. If only in language – rather than practice – restoration by-passes some of the paradoxes associated with restorative intervention in wilderness *(iv)*. However, in contrast, one European respondent supported the term by suggesting that it encapsulated the meaning of wilderness restoration aspirations neatly.

(i)	*"[…] restoration is just a term that we've used in dialogue and […] people are more comfortable with, that we have agreement on; it's a set of principles" (US1)*
(ii)	*"Rewilding just sounds a bit romanticised […] a bit too sentimental for to describe a serious conservation thing" (NZ2)*
(iii)	*"It just sounds a bit idealistic and you can't be idealistic […] if you want to be idealistic then become an ecologist, not a conservation manager" (NZ2)*
(iv)	*"I think people are probably more comfortable with restoration because rewilding brings out the paradoxes […] I think the paradoxes are always there but it brings them to the forefront and it makes people say 'wait a minute, rewilding?'" (US6)*

5.4.2.4 Technocentric wilderness

In New Zealand, where their restoration paradigm is rooted in the field of nature conservation, as opposed to wilderness science *per se*, ecological restoration encapsulates their management objectives. But interestingly, in America, where wilderness character emerged as central to their restoration mandate, respondents argued that their restoration emphasis on ecological resilience through 'cores, corridors and connectivity' does not connect strongly enough with 'wildness' to be considered 'rewilding' *(i)*. Despite being the epitome of academic, archetypal conceptions of rewilding, this is arguably simply ecological restoration *in* wilderness. While wilderness may provide a great means for achieving ecological restoration, if 'wildness' itself is not the ultimate objective then it cannot be considered 'rewilding' *(i)*.

> *(i) "[Everglades Restoration Programme] is not a 'rewilding' project because the lands being preserved are very much manipulated […] so this restoration project looks to mimic the natural delivery as much as possible but through, I guess, a fairly complex engineering project and that component of it really doesn't feel very wild to me" (US3)*

While reconnecting fragmented core areas of wilderness is a defining ambition in America's resilience framework – and a corner-stone concept of rewilding – ecological functionality alone does not define wilderness. Rewilding cannot simply be about ecological processes; the human connection with the rewilding process must be central *(i)*. Therefore, some US respondents confirmed Monbiot's (2013a) sentiment that rewilding should be about the 'wild heart' of human relationships with the natural world. *US7* explained that many of their bear management projects could be labelled rewilding, but their work on trout populations could not, because there is not an inherent, perceptual sense of wildness in cultural connections with trout *(ii)*. As *US9* pointed out, this may just be "how it is talked about in the context of a continent that still has a lot of large landscapes that are really fairly natural and fairly undisturbed", but European support for this perspective suggests otherwise *(iii)*. The predominance of ecological aspirations in wilderness restoration rhetoric fails to move 'wilderness quality' along the wilderness continuum on any axis other than natural conditions. It fails to enhance the experiential quality of wildness, which a number of respondents intuitively understand rewilding to imply. For some respondents 'rewilding' implies not only the removal of human influence through the restoration of ecological processes, but also the removal of a human footprint in terms of cultural artefacts in wilderness *(iv)*. Where 'rewilding' is understood to be concerned with 'wildness' (experiential quality) as opposed to 'wilderness' (land quality), the restorative emphasis on ecology is less contributory.

(i) *"You wouldn't have to use that word [rewilding] to convey that ecosystems would be more natural [... so rewilding is about a...] perceived wilder landscape" (US9)*

(ii) *"[…] I think what is really going on there is a perceptual thing […] the wolves are a good symbol […] of a perceived wilder landscape […] There is something about a large predator that is a big part of that notion of wildness" (US9)*

(iii) *"[…] I think the ecological side of it is obviously really important, but it is more significant that this could mean wilder human relationships" (EU1)*

(iv) *"[…] people would see it [rewilding] as returning to the wild; removing that human component. We have cabins in the backcountry but nobody is looking to take those out" (US4)*

Beyond the absence of any inherent 'sense of wildness' to international wilderness restoration, many American respondents cited the paradox implicit in describing such an interventionist conservation paradigm in wilderness terms. To trammel wilderness in the name of 'wilderness restoration' is to commit a logical fallacy. For the more purist wilderness advocate, rewilding implies restoring an untrammelled quality to wilderness areas through the retraction of any on-going human intervention *(i)*. To the extent that 'wildness' (in terms of the autonomy of natural processes in wilderness) is central in the very expression 'rewilding', then this emergent restoration paradigm is an oxymoronic, technocentric approach for ensuring that wilderness meets the expectations of a 21st Century society *(ii)*. The species specific emphasis exemplified in the wilderness restoration strategies explored in this chapter foreshadows a theme which emerges in Chapter 7; the distinction between restoration 'in' wilderness and restoration 'of' wilderness.

(i) *"Rewilding implies to me that we are going to buy a whole bunch of land and […] our management goal is going to be wildness, which means hands off, and I don't think that is what is going to happen because the people who have been pushing for rewilding are usually thinking of a particular species" (US10)*

(ii) *"[…] so if rewilding to you is bighorn sheep and this is what you need to do to have bighorn sheep [install water impoundments] then that is a huge intervention with massive implications" (US10)*

5.5 Distinguishing themes between international wilderness frameworks

Although values associated with remote, undeveloped and uncultivated land are present within all international conceptions of wilderness, this chapter has illustrated how wilderness is constructed using subtly different parameters which are largely specific to different world regions. This section explores the themes which have emerged as having particular significance in differentiating between international restoration frameworks.

5.5.1 Historical fidelity, authenticity and baselines

Different histories result in distinct degrees of concern for historical fidelity and authenticity in wilderness restoration. Conceiving wilderness as a 'frontier landscape' – with a stark boundary between wild and civilised - is familiar to places with a colonial history and far less significant to those with a longer history of European-style culture and development (Hull *et al.,* 2001). In 'new territory' contexts, the moment of colonisation is typically considered to mark the demise of truly pristine wilderness, meaning pre-settlement conditions provide a useful benchmark against which 'landscape change' can be measured *(i)* (Miller, 1995; Borrie & Roggenbuck, 1996). In accordance with Australian findings (Mackey *et al*., 1998:11), in America and New Zealand an important reason for the constitution of wilderness areas "[…] is for the management of land for the protection of wilderness and the restoration of land to its condition before European colonisation" (Mackey *et al*., 1998:11) *(ii)*. While preserving natural conditions is important to all wilderness frameworks, this means significantly different things depending on the length of a region's human history. Present day NZ remained isolated from human influence until the arrival of Polynesians, approximately 1,000 years ago, and subsequently Europeans 225 years ago (Molloy, 2001). With such a recent history, pre-settlement conditions are more discernible than in Europe's ancient cultural landscapes *(iii)*. In 'new world' countries, where pre-settlement conditions are more recognisable, they are more likely to be adopted as a restoration target. Where they are more convoluted, more challenging and ultimately less meaningful due to the longevity of human management, wilderness restoration adopts a more future-focussed outlook *(iv)*. The degree to which restoration frameworks are grounded in the past or future is therefore a key differentiating criterion. While New Zealand's mandate is the preservation "an authentic landscape" *(NZ4)* the European emphasis is on a progressive, innovative future for wilderness which celebrates, rather than laments, its human history. The degree to which wilderness restoration is forward-looking or retrospective (arguably wilding v. rewilding - Chapter 7) is, in part, a consequence of different cultures and human histories.

(i)	*"The ideal […] would be that these places would be the way in the future that they were before Euro-Americans got in here and started mucking around" (US9)*
(ii)	*"[The vision is to] restore it to what it used to be like originally before humans intervened […] to before the Industrial Revolution. Maybe sort of a pre-1900 type of system" (US3)*
(iii)	*"[…] in Scotland you could argue how far do you go back. Do you go back to the last glaciations to restore naturalness or do you go back to when the bloody English arrived or whatever. Whereas here it is a case of Maori arrived, they did a whole lot of stuff, the Europeans arrived and did a whole lot of stuff, so […] you manage to one of those two dates" (NZ4)*
(iv)	*"We try to learn a little bit from the past – and then we try to bring back some of the missing functions – but it is forward looking […] We don't really know what will be the outcome" (EU6)*

But, even in countries with a colonial history, wilderness is not synonymous with historical fidelity (as is sometimes assumed (Callicott, 2000)). While the significance of pre-settlement conditions is inherent in aspirations for primitivism, both US1 and US2 indicated that while they are keen to learn from the past, they are not trying to recreate it. The significance of resilience to wildland restoration projects is testimony to this *(i)*. As Section 5.3.2 details, wilderness frameworks, such as the US Wilderness Act, were written at a time when nature was thought to be static and stable (Graber, 2012).[9] With increasing recognition that "...we live in a world that has been altered and is being altered" *(US1)*, building resilience through adaptive management is steadily taking the emphasis away from pre-settlement conditions *(ii)*. Not all US ecological acts are concerned with a romantic desire to restore 'vignettes of primitive America' (Vucetich *et al.*, 2012). While the return of the wolf means that every native species present 200 years ago in the Greater Yellowstone ecosystem is once again present, *US3* stated that wilderness management in the US is increasingly moving away from restoring historic conditions and focussing on restoring resilience instead *(iii)*; keystone predators are a basic principle of ecosystem health (Vucetich *et al*., 2012).

(i)	*"In general a lot of protected area managers in the United States are moving towards restoring something that is resilient and fully-functioning rather than historical conditions, and that's because of climate change […]. Resilience is the most important thing" (US3)*
(ii)	*"[...] how do you manage for naturalness [as in natural, pre-settlement conditions] in uncharted territory?"(US11)*
(iii)	*[A critical question is] should we restore it to historical conditions? The second thing is should we restore it to something that is resilient and fully-functioning? I think in general a lot of protected area managers in the United States are moving towards the latter and that's because of climate change (US3)*

Moreover, the untrammelled axiom of US wilderness moves the US wilderness framework beyond the confines of historical fidelity. Whether ecological processes are trammelled or not is a current, 'here and now' quality. Arguably, therefore, US wilderness "focuses on present activities and appearance rather than attempting to reflect the history of how the area has been used" (McCloskey & Spalding, 1989). This has considerable ramifications for US wilderness restoration; despite the significance of the pristine, untouched axiom, wilderness *can* be restored. From this untrammelled perspective, Americans "[…] value natural history, even when the historical genesis has been culturally interrupted and restored" (Rolston, 1990:248). The history of a wilderness thus provides "[…] a floor [for future management], not a ceiling" *(US6)*, meaning that it cannot constrain the contemporary or future wild quality of that landscape *(i)*. Instead the history of wilderness acts as a gauge for improving wilderness

[9] Tweed (2010b) explores, in detail, the irony that the primary goal of the National Parks Service is to preserve natural systems, but change is inherent in natural systems.

quality *(ii)*. Fire Island Wilderness Area provides a prime example of how, from a legislative perspective, the history of wilderness is irrelevant to its current quality *(iii)*. Correspondingly, despite the significance of pre-settlement conditions to US wilderness discussions, the legal baseline for US wilderness is simply the point at which the land was designated *(iv)*. This represents a critical disjunction between US and New Zealand's restoration frameworks. Accordingly, different axioms of wilderness result in radically different baselines being adopted as management guides.

(i) *"[…] in one sense you can't separate past management and manipulation and past interference from how you manage your land, but it is a floor from which you have to sustain or improve that" (US6)*

(ii) *"[…] what our job is is to not let it move down the [wilderness quality] spectrum" (US6)*

(iii) *"On Fire Island […] what is now wilderness there actually used to be all developed with houses and they have been razed and that is a very much restored ecosystem and it is now designated as wilderness" (US6)*

(iv) *"[…] the general American perception is probably great snow covered mountains forested when the pioneers came through – that purist thing, but in terms of how agencies manage our baseline is the year that that land was designated" (US6)*

5.5.2 Process v. endpoint

The significance of historical fidelity to wilderness frameworks brings into focus another important theme: the degree to which these different study areas are concerned with wilderness as a living, breathing entity or a static endpoint. Different wilderness frameworks place widely varying degrees of emphasis on the 'mode of travel' towards 'restored wilderness' and the actual physical condition of wilderness that is aspired to. The degree of emphasis placed on 'product *versus* process' has significant implications for the degree of human intervention considered appropriate in wilderness restoration.

New Zealand's wilderness framework is focussed on the experiential and biophysical parameters of wilderness. Wilderness is a place of recreational challenge and a place exhibiting natural conditions. Therefore, while restoring natural processes is important to NZ's conservation effort the priority is the biodiversity rescue mission. Restoration in wilderness focuses on species composition and the presence of native species in perpetuity. Restoration therefore depends upon management intervention to ensure that this destination is reached *(i)*. Where wilderness quality is a tangible and measurable quality, management measures are imperative to the restoration of wilderness.

(i) *"[…] if it got warmer and the forest crept up and the alpine zones disappeared and the dotterel had no breeding site […] then we would intervene and find a management way of [tailed off]" (NZ2)*

While US wilderness is, in part, a biophysical condition (e.g. remote, natural conditions, undeveloped), the untrammelled mandate moves beyond managing towards an endpoint, instead placing value upon the autonomy and dominance of natural processes. From this process oriented perspective, wilderness character should evolve under the force of natural processes. Wilderness is not a landscape condition at a static point in the past, present or future; it is an on-going process which operates through time. There is existential value to land beyond human control and consequently "[…] how you get there [to restored wilderness] is important" *(US9)*. America's 'Minimum Requirements Analysis Framework', which is used to assess whether a specific intervention is necessary, neatly demonstrates this through its emphasis on establishing the minimal intervention required to do the job *(i)*. For some US wilderness managers, natural, wild processes are required to reach natural, wild endpoints, resulting in a 'hands off' management imperative. The value of 'untrammelled wilderness' is the value of non-intervention itself, as opposed to the result *(ii)*. This is a distinctly American value *(iii)*.

(i) *"[…] maybe there's a non-native tree and the best way to take care of it is using a chain saw. The Wilderness Act tells us no, go in and use a handsaw which could be ten times more difficult, expensive and not efficient" (US3)*
(ii) *"Untrammelled is the actions we take. It is not the effects" (US10)*
(iii) *"[…] there are no other laws internationally that use the concept of 'untrammelled' (US10)*

Having shifted from defensive 'nature conservation' to more aggressive 'nature development' in the past two decades (Klaver *et al*., 2002), Europe adopts an interesting position between New Zealand and America on this process/product dichotomy. In many European wildlands, conservation tools which are ontologically close to the genesis of natural processes allow ecological restoration potential to be realised, while retaining the intrinsic and existential value of land which is largely autonomous *(i)*. Releasing herbivores which are "basically domesticated species that are derived from hoofed animals that were once wild, such as cattle, horses, sheep and goats" (Klaver *et al*, 2002:4) is common in European wilderness restoration, indicating the prominence of re-establishing ecological processes in their restoration frameworks *(ii)*. Such 'ecological surrogacy' mimics natural processes, thereby retaining a degree of self-will to the land. Despite the strategic emphasis outlined in Section 5.2.3, Europe is not entirely endpoint-orientated *(iii)*.

(i) *"[…] if you start a rewilding process you are interested in re-establishing the natural processes and for it to be as close to natural as possible" (EU9)*
(ii) *"[…] so closing them [old, unused roads] is not really having much direct ecological value - it is more that we close it down because we would like to see what is happening with the natural processes" (EU9)*
(iii) *"Maybe we will never reach the vision, but the direction for us is important" (EU8)*

5.5.3 Cultural heritage and people

All wildernesses have a human history (Cowley *et al*., 2012). Consequently, all wilderness management contexts require tricky decisions about the place of cultural heritage in wilderness landscapes (Feldman, 2011a). Because international wilderness frameworks vary in terms of the degree of emphasis they place on wilderness as a 'pristine place', the degree to which international restoration positions are reconcilable with cultural heritage is variable. Different countries approach the management of cultural heritage differently. In fact, even within countries there are radically different perspectives on the place of cultural heritage in wildlands.

While in the US there is legislation for historic preservation, this is not as readily recognised as the natural heritage *(i)*. A cultural resource must demonstrate a high standard of significance to warrant protection in US wilderness (Cronon, 2008)[10]. On account of the significance of the primeval, untouched axiom, US wilderness draws a very stark boundary between nature and culture (Callicott, 2000). Consequently, some respondents referred to a significant degree of tension surrounding cultural resources as the undeveloped quality of wilderness "is preserved or improved by the removal of structures" (NPS, 2012:4). The management approach towards cultural artefacts in wilderness is therefore akin to a 'clean up' *(ii)*. Against the frontier wilderness narrative, *US5* and *US2* both expressed concerns that the cultural values in wilderness are forgotten, even repressed, to maintain the image of an untouched utopia *(iii)*. The danger inherent within this is that "in a place like this, if we are not careful, the history will get lost in the nature" *(US5)*. In this sense, Cronon's (2008:638) accusation that US wilderness management denies the early history of settlement by "privileging certain historic eras over other" is supported here *(iv)*.

(i)	*"We have laws on historic preservation as well but I think in wilderness lands it seems like that is not very well emphasised" (US2)*
(ii)	*"We have a District Ranger who wants to clean up an old garbage site – what he sees as just a trash dump – but it has cultural artefacts in it [...]the mentality with those folk is that we want to return this to complete nature" (US5)*
(iii)	*"I think cultural resource management is not emphasised enough" (US2)*
(iv)	*"[…] it is sort of interesting that in some ways we have almost ignored that aspect of the fact that humans have been part of the ecosystem for a long time and have had a number of impacts - not necessarily positive or negative, just impacts that have shaped the ecosystem - and we're sometimes in a bit of denial over that" (US3)*

However, despite its importance to popular perception, 'pristine' never appears in the Wilderness Act (Foreman, 1998; Friskics, 2008). While extensive criticism in academic

[10] Legislation concerning historical preservation in the US uses an arbitrary age of fifty years old as the threshold for considering a cultural resource worthy of protection in a wilderness area.

literature suggests that US wilderness is managed to maintain the illusion that it is devoid of any historical or present human presence (Cronon, 2008), the research reported here suggests that wilderness managers are more pragmatic about cultural artefacts than is typically reported. For instance, from a practical perspective backcountry huts were described as a useful management resource *(i)*. Beyond this operative purpose, many wilderness managers actually embrace these cultural values *(ii)*, in some instances even celebrating them as contributing overall wilderness quality *(iii)*, or at least demonstrated pragmatism about the degree to which they compromised wilderness quality *(iv)*. While returning to a primitive state is central to the US wilderness restoration framework, *US2* argues that this is only in an ecological sense; it does not necessitate the removal of cultural artefacts. From *US2's* ecological, rather than landscape, perspective, cultural resources with historical value can be incorporated into wilderness stewardship plans *(v)*, as argued by Ulvi (2001). Furthermore, as *US1* explains, the degree of prohibition in wilderness areas can provide the perfect protection for features; Bandelier Wilderness, in Bandelier National Monument, was partly established to protect its archaeological resources (Cowley *et al.*, 2012). As Section 5.5 has demonstrated thus far, US wilderness quality is largely a current condition. The history of the landscape, as exemplified through the Fire Island example, does not prevent that landscape from being considered 'wilderness'.

(i) *"[backcountry huts] are appropriate and important to manage our wilderness – so our rangers will stay there, they will help protect those areas […] and so that gives them a lot more credence" (US2)*

(ii) *"[There are] some cultural resources that are really important to this wilderness area and we don't want to lose them and that is a part of that wilderness" (US6)*

(iii) *"[…]some people think [an old cabin] is really cool because it is […] a reminder of what it took to make a life and make a living in this really harsh landscape" (US6)*

(iv) *"...the majority of people probably don't mind seeing some imprint of past cultures or past management"* (*US4*)

(v) *"[…] we might go to great lengths to preserve that cabin […] because it has some kind of historical significance – we do do that" (US3)*

The process/endpoint discussion therefore has significant implications for the place of cultural heritage in wilderness; where wilderness managers place more emphasis on the undeveloped axiom, cultural artefacts are a detractor. However, even the "untrammelled naturalness of wilderness areas does not mean that humans are absent from wilderness; nor does it mean that such places are untouched by human agency" (Friskics, 2008:388; Landres, 2010). 'Untrammelled' refers to the "intentional actions that we take to manipulate" *(US6)*. As such, "[t]rammelling doesn't come into conflict with the protection of cultural resources" *(US6)*, because generally, the benign passivity of cultural artefacts do not impact on uncontrolled, unfettered ecological processes (Cole,

1996) *(i)*. The significance of individual wilderness managers' interpretations of the relative importance of different axioms to restoration frameworks is explicit; within individual organisations different respondents clash on this debate *(ii)*.

> *(i)* *"a cabin is certainly a demonstrable sign that that landscape is not wild, but from now on that cabin is not influencing the wildness of that landscape […]. What happened in the past I don't really care about" (US10)*
>
> *(ii)* *"[…] there are differences in perception about cultural resources, which makes it incredibly difficult to manage them. Some people really embrace them, some people really bristle at them" (US6)*

Management perspectives on cultural heritage and contemporary structures are a little more dogmatic and a little less revocable in New Zealand. On account of the fact that wilderness is simply a recreational designation, human artefacts are incompatible with the primary purpose of New Zealand's wilderness areas, namely, the provision of the wilderness experience. New Zealand's approach to cultural artefacts in wilderness is consequently more stringent and purist *(i)*. Accordingly, "to retain natural wilderness qualities developments such as huts, tracks, route markers, and bridges are inappropriate, and in the few cases where such facilities exist they should be removed or no longer be maintained" (Wilderness Advisory Group, 1985). While, similarly to the US context, cultural artefacts are unlikely to have a large effect on the ecological integrity of the area, it is irreconcilable with the conceptual foundations of a recreational wilderness framework.

> *(i)* *"I know that in the past they have made areas wilderness areas and then they have gone and ripped the huts out [...] they have gone into areas and demolished the huts" (NZ4)*

In Europe the cultural artifice of wilderness is more readily recognised *(i)*. Consequently, conservation of cultural heritage is typically considered to be very important. The significance of historical human connections to European wilderness (Section 5.2.3) means that demonstrating the historical architecture of wildlands in efforts to restore them is imperative *(ii)* (Lupp *et al*., 2011). Cultural heritage plays a vital role in the very history of wilderness; it brings meaning. For some respondents, therefore, wilderness *is* Europe's cultural heritage *(iii)*. Consequently, while all wilderness frameworks are broadly concerned with 'primitivism', this is interpreted in radically different ways in accordance with the longevity of a area's history. Most notably in Scandinavian countries, a significant history of subsistence and transient indigeneity has resulted in the significance of 'cultural primitivism' as opposed to 'natural primitivism' in the wilderness context *(iv)*.

(i) *"Europe is an old continent, used and with a history. […] For so long wilderness was thought to be something not for Europe to be concerned with. But about fifteen years ago […] people started to think maybe it is possible to revive wilderness in Europe" (EU8)*

(ii) *"[we need to] anchor this in a historical, cultural dimension […]. In all places we are working there is a cultural link" (EU6)*

(iii) *"[…] if you go down into history and look at names of places and villages many will have names of aurochs, bison, wolf […]. There is some kind of heritage and link […] that they have a history and that that history is in the wild" (EU6)*

(iv) *"Our definition of wilderness – the Finnish word – it has a different meaning, it involves humans in the nature and using the nature in a sustainable way like it traditionally has been done; it is not a place that is totally precluded from human influence" (EU5)*

While cultural heritage is irrefutable evidence of a human history, beyond "telling the story", this history has little place in contemporary wilderness *(i)*. Much to the chagrin of local tribes, utilisation, extraction and consumption in US wilderness is very much taboo *(ii)* (Watson *et al*., 2011). The preservation and protection mandate is "so restrictive that it precludes an understanding of how and where people have lived and evolved alongside wild processes" (Higgs, 2006:501; Miller, 1995). This said, a number of respondents referred to Congress's enactment of ANILCA (Alaska National Interests Lands Conservation Act) in 1980 to allow for continued traditional subsistence uses and access in Alaskan Wilderness in demonstration of the fact that the US Wilderness Act's purity conception of wilderness is inappropriate and difficult to apply where indigenous cultures continues *(iii)*.[11]

(i) *"[Stories of the past] are embraced in that we love to tell the stories of it, but in terms of us being actively involved in some type of consumptive use of extractive use of the resource, we don't" (US3)*

(ii) *"hunting in a National Park […]is very much taboo which annoys the 26 native tribes associated with the Park (US3)*

(iii) *"[…] wilderness in Alaska is treated much differently than wilderness is in the rest of the lower 48 because in Alaska there is still a lot of use of wilderness land for subsistence purposes […] their relationship with wilderness areas up there is very different" (US6)*

In contrast, Europe provides the finest examples of how "[…] strict wilderness conservation may be combined with sustainable tourism in a way that ensures the protection of fragile natural values but at the same time offers meaningful ways for

[11] Similarly, when the Eastern Wilderness Act was passed in 1975 areas which had been precluded from wilderness designation prior to this due to heaving logging and so forth could be designated because this Act adopted less of a purity conception of wilderness *(US10)*.

humans to enjoy wilderness" (PAN Parks 2009:4). Europe's ecosystem services and 'social wilderness' framework is more readily accepting of the culturally derived meaning of wilderness. Their resource focussed conception of nature recognises that local people are often in favour of the idea of preserving their wildlands if protection doesn't mean a strict no-use policy *(i)* (Zunino, 2007). While Europe is arguably trying to construct a sense of ecological symbiosis between the natural environment and societal needs, in New Zealand, conservation lands are preserved as an outdoor museum exhibit, resulting in a 'zero extraction' resource management position *(ii)* (Abbott, 2011). Despite being a signatory to the Convention on Biological Diversity (which focusses on the right of indigenous people to have sustainable access to traditional materials (Kormos, 2008)), with respect to "[…] the harvesting of different animals to eat in wilderness […] the legislation pretty much says that everything that is native is protected" *(NZ4)*, causing tensions with the Iwi (Maori tribes) *(iii)*.

(i) *"I would say sustainable use of natural resources is the main aim of management" (EU3)*

(ii) *"[…] here in New Zealand we never touch a native tree [...]instead we have to thrive on exotics […] It is kind of like we have skewed wilderness to be almost like this pure nature, and people are bad and we just have to keep away from it to keep it pure"(NZ1)*

(iii) *"[...]but ultimately a Maori concept would not be about wilderness. It is not a term that translates" (NZ4)*

Due to word constraints this overview of cultural resources and the place of people in wilderness is abbreviated. In light of more detailed discussion in Chapter 7 and 8, this section simply serves to demonstrate that the place of cultural heritage in wilderness is dependent upon how wilderness is defined, demonstrating the culturally determined nature of wilderness management practices and restoration perspectives.

5.5.4 Wilderness philosophies: purists and pragmatists

The degree to which wilderness is considered a biophysical reality or an abstract, philosophical ideal varies greatly and has direct implications for how – or indeed whether – wilderness can be restored. New Zealand's biocentric philosophy for conservation lands – including wilderness - advocates nature preservation and species continuity, meaning "[T]he wilderness concept therefore can be applied as an instrument for ecological restoration" (Mackey *et al*., 1998:5). While NZ's conservation and recreation agendas are distinct from one another, wilderness has applications in both; theoretically, wilderness is an applied recreational value, but it is nonetheless a critical conservation tool. Ultimately, New Zealand's wilderness framework is a management discourse. As a practical management paradigm it is guided by practical

reality. Therefore, despite having purist values (e.g. about native species) they are pragmatic *(i)*. The predominant mandate within this management discourse is ecological restoration 'in' wilderness, as opposed to the restoration 'of' wilderness. Wilderness/wildness itself is not necessarily the objective.

> *(i)* *"[…] you come up with an idealistic system and then compromise […] It depends. That is the answer to everything […] we are pretty good at looking at each scenario on its own merit" (NZ2)*

Wilderness restoration in Europe, with its history of settlement and civilisation, is unquestionably more challenging than in 'frontier lands' (Zunino, 2007). The philosophical foundations of wilderness management in Europe are consequently more convoluted by virtue of the fact that wilderness conservation/restoration remains a new concept and different organisations and countries are approaching this emerging paradigm in fundamentally different ways. However, 'ecocentric pragmatists' might embrace the European reverence for the intrinsic value of wildland, while acknowledging the need to compromise on absolutist values in Europe's humanised landscapes *(i)*. The socio-political constraints of comparatively small-scale wilderness necessitate a grounded and holistic approach to the management of wild landscapes and an emphasis on *"the best that we have" (EU8)* rather than a pristine utopia. "An incremental approach to wilderness protection is a necessity for a country that does not have a culture of wilderness conservation" (Zunino, 2007:40). Beyond this ecocentrism is the anthropocentric sentiment inherent in the utilitarian 'ecosystem services' perspective. Europe's necessity-driven search for a more strategic land-use model for abandoned lands is arguably more experimental than philosophical or philanthropic. "In the end, the question is not whether we prefer a domesticated or a wild European landscape but rather which management options at each place will be more achievable and sustainable" (Navarro & Pereira, 2012:910)

> *(i)* *"We are not purists […] we are pragmatic. But, we need a clear concept, a clear strategy, clear rules because the message needs to be clear, but then we still need to be flexible...otherwise we will kill the whole concept" (EU8)*

In the US, wilderness is more than preserving a biophysical landscape or resource management (Borrie & Roggenbuck, 1996). Rutledge & Vold (1995:10) state that in the US "the most commonly cited reasons for wilderness preservation are for *bequest* (for future generations) and *existence* (just knowing wilderness is protected for its own sake) motives". This ecocentric philosophy is primarily concerned with the existential quality of autonomy, ergo the inherent distinction between people and wilderness is more

enduring in US wilderness. This abstract metaphysical core is distinctly American, and when coupled with more biophysical parameters results in a challenging management narrative akin to "philosophy dressed up like biology" (Rolston, 1990:243).

5.6 Summary

Different cultures, different contexts and different human histories result in radically different wilderness restoration frameworks. Using practical examples and illustrations from three continents, this chapter demonstrates that approaches to the management and restoration of wild areas are fundamentally shaped by conceptions of what wilderness is. While there are a number of shared international wilderness proxies (e.g. roadlessness), beyond these, wilderness exists within a broad matrix of meaning and national specificities; the significance of which is defined by wider historical, political, cultural and social factors which have been shown to differ between study areas. Disparity in cultural relationships with the natural environment, and perceptions of how the past, present and future landscape components should interface, result in wilderness being defined using fundamentally different axioms (e.g. historical fidelity, self-willed, ecological integrity). On account of such context-dependent wilderness frameworks, there is no commonly understood framework for wilderness restoration. Wilderness management emphases range from restoring a fully functioning self-regulated ecosystem or maximising ecosystem services to manifesting a sense of wildness for recreation. Management approaches represent a similarly varied assortment, from the natural regulation, non-intervention position to high-intensity management control. Beyond such international contrasts, this chapter has revealed the internally inconsistent nature of individual wilderness frameworks, most notably North America. Management and restoration targets in wilderness are rarely straightforward or explicit. Rather, "[…] the goal of wilderness management is to maintain or restore wilderness quality within a matrix of other objectives, such as maintenance of cultural heritage and broad nature conservation" (Miller, 1995:40). However, as preservation objectives are increasingly irretrievable in the face of rapid environmental change (Cole & Landres, 1996), a number of simultaneous restoration objectives are clearly incompatible. Wilderness managers are unclear about what new restoration targets in novel ecosystems should look like, but in this search "[…] our words don't serve us very well, words like 'natural' and 'wild'" *(US9)*. Amidst such conceptual disorientation, one thing is clear; despite the infancy of Scotland's wildland movement, perhaps it is not as far behind the *avant garde* of wilderness preservation as is commonly assumed. With the significance of cultural contexts and wilderness conceptions to restoration paradigms established, the following chapter considers the implications of Scotland's distinct wildland model for its rewilding frameworks.

Chapter 6

Visions for a wilder Scotland: rewilding applications, interpretations, approaches and motivations

6.1. Chapter aims

This chapter presents an overview of 'rewilding' perspectives and practices in Scotland from the combined results of (i) scoping discussions with key stakeholder organisations in the field of wildland management, (ii) the initial Delphi scoping round and discourse analysis of policy documents and (iii) estate management plans. Discussions centred around a number of key themes concerned with interpretations, approaches, strategies and motivations of wild land management in Scotland. The purpose of this scoping phase was to establish the areas of consensus and conflict in the management of Scotland's wildland.

Consequently, this chapter aims to:

- *explore the characterisation of different rewilding discourses in Scotland's wild places*
- *identify areas of convergence and divergence between different rewilding discourses*
- *explore the meaning(s) of rewilding in Scotland*
- *to identify the practical challenges associated with managing land for 'wild qualities'*

6.1.1. Data-set review

The data-set for this chapter is derived from phases 3 and 4 of the research methodology; 20 in-depth scoping interviews with key stakeholder organisations in Scotland's uplands, the Round 1 interviews and subsequent iterations (see Appendix VII for round 1 feedback synthesis) with the 17 Delphi panel estates (Fig. 6.1), and discourse analysis of the Delphi estates' management plans and 'vision' documents. This chapter is therefore based on the perspectives of rewilding proponents and opponents, as well as insights from initiatives which are commonly labelled 'rewilding' in Scotland.

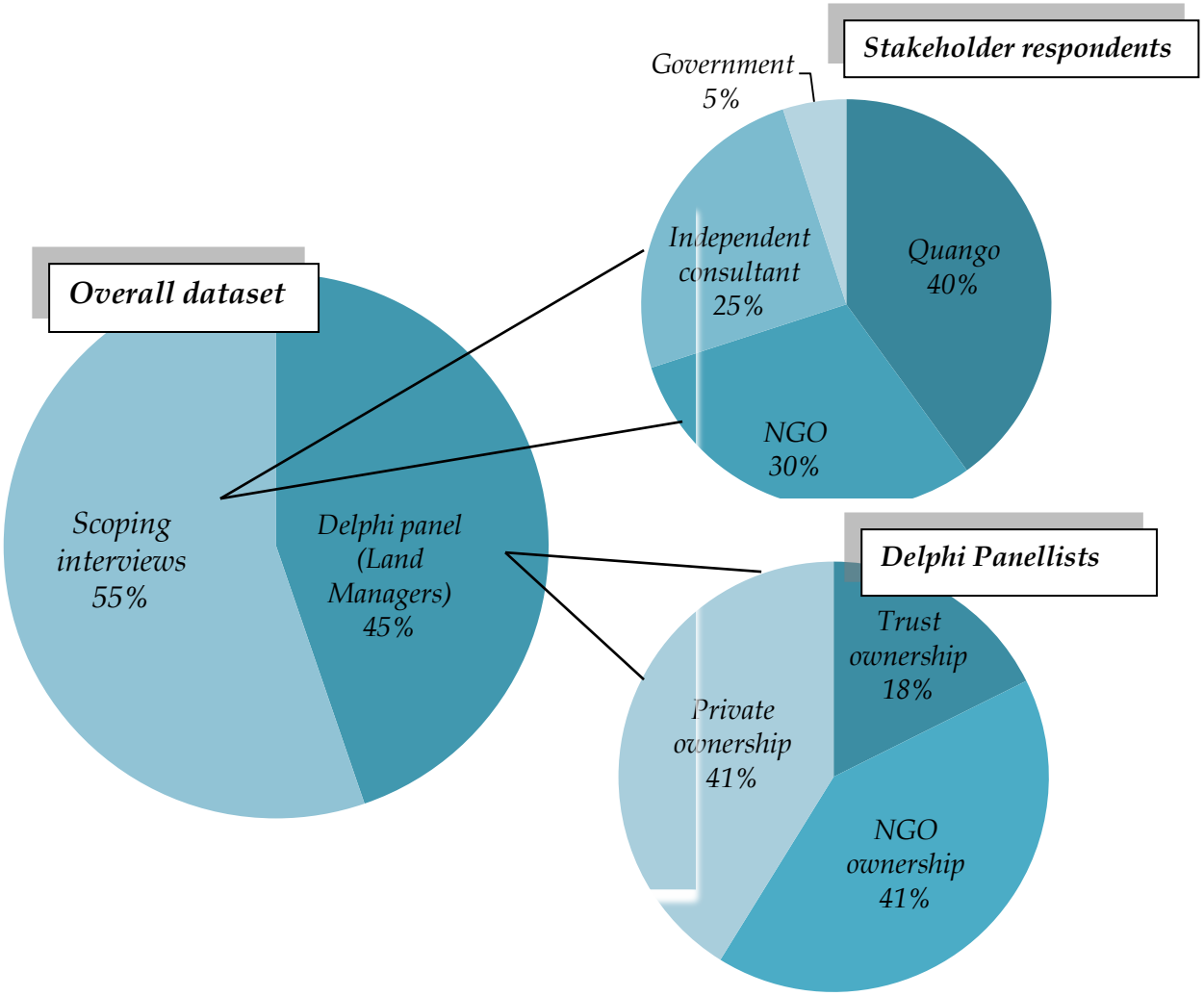


***Figure 6.1**: Overview of interview dataset for this chapter which comprises both interviews with scoping stakeholder respondents (phase 3) and interviews with Delphi panellists (phase 4). The nature of these two cohorts is also detailed in terms of their membership.*

Both the scoping interviews and Round 1 Delphi interviews were conducted face-to-face.[1] Discussions were open-ended and informal, and in the Delphi panel context frequently resulted in a journey around the estate to provide visual explanations of approaches adopted. Table 6.1 introduces the interview prompts used to guide Delphi panel discussions. A similar prompt structure was used for scoping interviews. All recorded components of meetings were fully transcribed and thematically analysed using computer-assisted qualitative analysis software, QSR Nvivo. Preliminary analysis, involving reading and re-reading transcripts and field notes to build themes (Grbich, 2012), enabled the identification of broad themes which were then used for ordering and synthesising data. Within each theme a number of codes were identified (Fig.6.2).

[1] Generally occurring with only one individual, but on occasion two or three individuals from the same organisation or estate were present, enabling a mini-focus group approach to be adopted.

Section Title	Theme	Researcher prompts	Rationale
Introduction	*Recap the research aims and process*	▪ *Signpost the relevance of this research* ▪ *Recap on the benefits to accrue from involvement* ▪ *Emphasise participant driven nature of the process*	To engender continued support for the research and promote an environment conducive to open dialogue
The 'wild land vision'	*Estate character and nature (i.e. area, designations etc.)* *Vision and Ethos*	▪ *Vision for the future of wild land,* ▪ *Dominant ethos* ▪ *Management aims and motivations*	To establish a contextual framework within which each estate is operating
The meaning of wild land& wildness	*Interpretations of wild land* *Enhancers and detractors*	▪ *Understandings of the parameters of wild land* ▪ *What compromises wild land* ▪ *Compatibility of wildness with traditional, and non-traditional, land-uses* ▪ *Centrality of wildness to their vision*	To gain insight into the vision of the landscape that they aspire to, and the variables influencing this
Rewilding and its meaning	*Defining rewilding* *Practising rewilding* *The coherence and pertinence of the rewilding concept in Scotland*	▪ *The parameters, vision and themes of rewilding* ▪ *The relative significance of landscape vs. ecological practice* ▪ *Compatibility of rewilding with traditional, and non-traditional, land uses* ▪ *Compatibility of rewilding with other 'green' agendas*	To identify 'rewilding themes' and gain an understanding of the potential for its integration with other land-use and land-management agendas
Scottish nature conservation and land management	*The natural vs. the cultural landscape*	▪ *Physical condition of Scotland's wild landscapes* ▪ *The degree of naturalness exhibited in Scotland's land* ▪ *The place of cultural features in their visions*	To explore how the paradigm shift towards 'wildness' intersects with the nature conservation framework
Exploring terminology and concepts	*Interchangeable terminology* *Visions of nature*	▪ *Rewilding, ecological restoration, enhancing wildness and wild land management as distinguishable terms* ▪ *The distinctness of 'wild' and 'natural'* ▪ *Clementsian ecology vs. the axiom of dynamicism*	To establish the degree of agreement and understanding amongst practitioners
The conceptual soundness of 'rewilding'	*Rewilding paradoxes*	▪ *The place of minimal intervention in the Scottish landscape* ▪ *The place of people in a 'rewilded landscape'*	To identify practical and conceptual fault-lines in rewilding
Conclusion	*Ownership of the process*	▪ *Further remind participants of the nature of the process* ▪ *Participants expectations and aspirations for the research process*	To explore opportunities for improving the process and ensuring it is 'panel lead'

Table 6.1: *Interview structure for Delphi Round 1 (general structure adapted from Glass, 2011)*

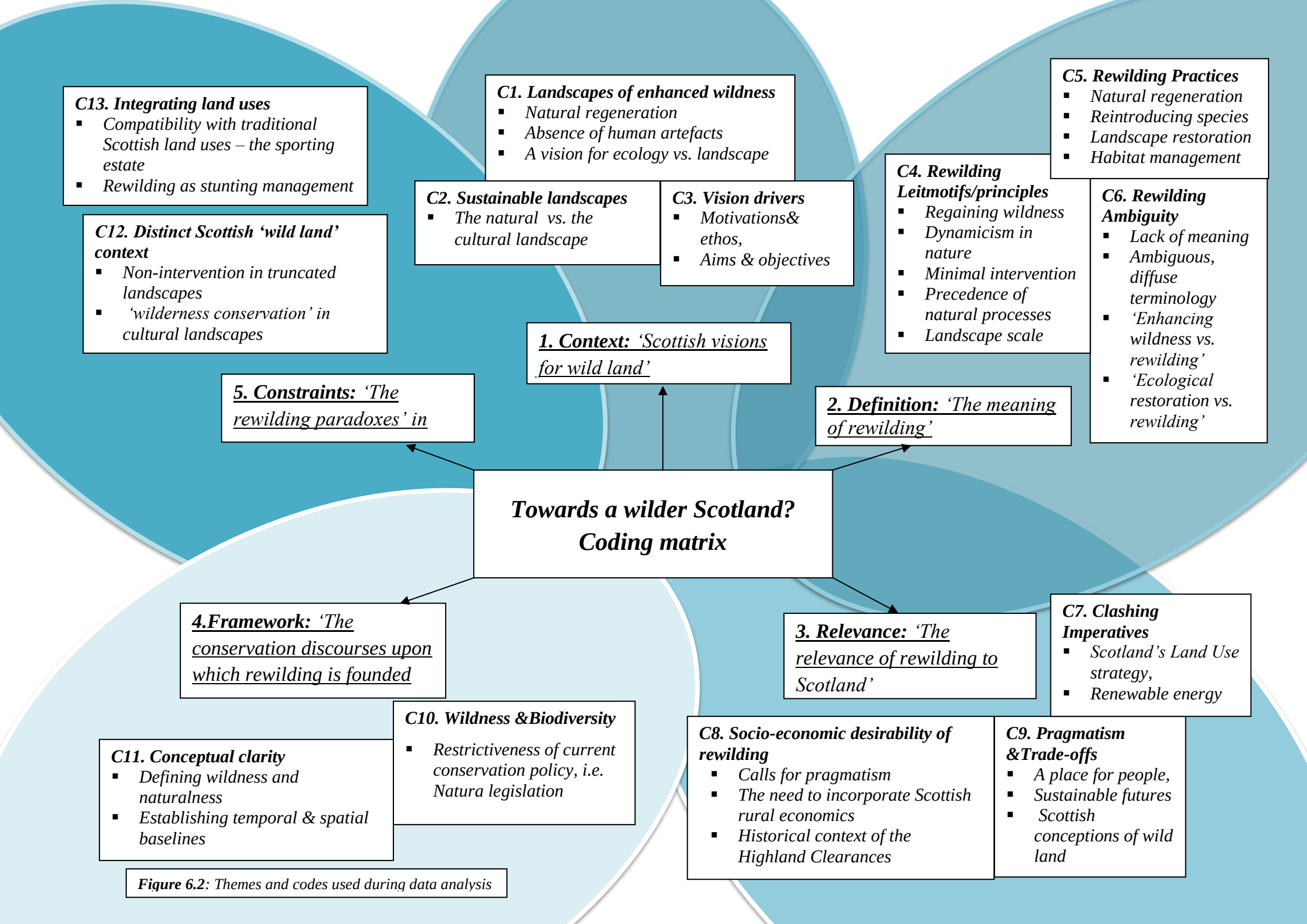


***Figure 6.2**: Themes and codes used during data analysis*

Table 6.2 characterises the scoping stakeholders and details the coding assigned to them for the purpose of attributing perspectives and viewpoints. Table 6.3 details the non-attribution coding for the Delphi estates (the panellists) and introduces their fundamental vision.

Introduction to the stakeholder organisations			
	Sector	***Stakeholder Organisation***	***Codes***
1.	*Quango*	*Scottish Natural Heritage*	*S6*
2.	*Quango*	*Scottish Natural Heritage*	*S21*
3.	*Quango*	*Forestry Commission*	*S7*
4.	*Quango*	*Forestry Commission Scotland*	*S14*
5.	*Quango*	*Forestry Commission Scotland*	*S15*
6.	*Quango*	*Cairngorms National Park Authority*	*S12*
7.	*Quango*	*Cairngorms National Park Authority*	*S20*
8.	*Quango*	*Highlands and Islands Enterprise*	*S11*
9.	*NGO*	*Game and Wildlife Conservation Trust*	*S1*
10.	*NGO*	*Mountaineering Council of Scotland*	*S8*
11.	*NGO*	*The National Trust*	*S4*
12.	*NGO*	*The John Muir Trust*	*S13*
13.	*NGO*	*The Association of Deer Management Groups*	*S16*
14.	*NGO*	*Scottish Wildlife Trust*	*S23*
15.	*Independent consultant*	*Wild land specialist*	*S3*
16.	*Independent consultant*	*Deer and land management specialist*	*S5*
17.	*Independent consultant*	*Upland ecologist*	*S9*
18.	*Independent consultant*	*Ecological restoration specialist*	*S17*
19.	*Independent consultant*	*Naturalist*	*S22*
20.	*Government*	*Scottish Government*	*S2*

Table 6.1*: Scoping interview stakeholder organisations and individuals.*

	Delphi Ownership	Vision	Codes
1.	Private ownership	*'...promoting biodiversity and natural beauty, we aim to create a wild landscape unspoilt by the impact of man'*	*P1*
2.	Private ownership	*'Sustainable multi-land use in the uplands and maintain tradition'*	*P2*
3.	Private ownership	*'Regenerating the ancient Caledonian woodland along with its flora and fauna and nature and people living in harmony'*	*P3*
4.	Private ownership	*'Ecological restoration of one the great wilderness areas in mainland Scotland'*	*P4*
5.	Private ownership	*'Re-establishing the land to its natural condition while sustaining traditional land practices'*	*P5*
6.	Private ownership	*'... balancing the needs of the environment with the sustainable needs of upland land use'*	*P6*
7.	Private ownership	*'Letting the land achieve its full ecological potential – a future natural state'*	*P7*
8.	NGO ownership	*'To move towards natural vegetation and natural processes'*	*CO1*
9.	NGO ownership	*'...balancing the conservation of the estate, including habitat regeneration, with the management of field sports while encouraging public access across the estate'*	*CO2*
10.	NGO ownership	*'...to be regarded as the best example of a near-natural, boreal forest in Britain'*	*CO3*
11.	NGO ownership	*'...re-establishing native woodland using natural regeneration, ... without fencing by controlling the numbers of grazing animals particularly red deer'*	*CO4*
12.	NGO ownership	*'...primacy of nature and wildlife allowed to flourish largely undisturbed by human nature'*	*CO5*
13.	NGO ownership	*'Ecological restoration to reinstate natural processes for the future'*	*CO6*
14.	NGO ownership	*'to restore a wild forest, which is there for its own sake, as a home for wildlife and to fulfil the ecological functions necessary for the wellbeing of the land itself'*	*CO7*
15.	Trust ownership	*' to re-create in the [names geographical area] an extensive tract of mainly forested wilderness, with most of the rich diversity of native species present in the area before human activities became dominant'*	*T1*
16.	Trust ownership	*'To achieve the regeneration and development of the [names place] Community, by managing the [names place] Estate as an area of outstanding wild land and rugged beauty'*	*T2*
17.	Trust ownership	*'ensuring that the special character of this place is preserved in a responsible and progressive manner whilst acknowledging its wilderness heritage and its importance as an area of outstanding natural beauty'*	*T3*

***Table 6.3**: Delphi panellists and their general vision as identified from their grey literature and interviews.*

6.2. Understanding Scotland's wildland movement: the current thrust

6.2.1. 'Holding the line': wildland protection

All respondents were asked to consider the significance of 'wild' within Scotland's upland management agenda currently, which thereby confirmed that there is increasing discussion of "the value of wildness to society and its significance as a distinctive part of Scotland's natural heritage" (SNH, 2002b:1). Most of the stakeholder organisations involved in this research have engaged in both internal and external discussions about wildland quality and its extent *(i)*, some having moved as far as mapping it, establishing a policy framework and definition and lobbying for a wildland protected area designation *(ii)*. Wildness is an increasingly important element of Scotland's environmental agenda *(iii)*.

(i) *"It is something we find ourselves talking more and more about these days" (S21)*

(ii) *"[…] so our kind of take on it is that wild land isn't really recognised legislatively at all […] so a kind of top line ask is that we need a wild land designation" (S13)*

(iii) *"[…] the concept of wildness is becoming much more prevalent" (CO7)*

However, as in Europe, Scotland is still trying to make sense of its wildland resource given that wilderness has not has the same ideological significance historically as it has in America (Fisher *et al.*, 2010). A substantial amount of Scotland's wildland focus continues to be fixed on defining its nature and extent amidst fears of a runaway trend of its demise *(i)*. Development of a wildland policy has been slow, and the establishment of a policy framework robust enough to protect this 'special quality' from the surge of wind-farm development in particular has yet to occur. As Scotland's wildland resource continues to be compromised, and shrink (Scottish Parliament debate, 2013), at a strategic level at least, discussion has not advanced beyond delineating it and preventing further degradation *(ii)*. The remit of 'maintaining' and 'protecting' wildland, therefore, echoes louder than 'enhancing' or 'restoring'. This is not to suggest that these organisations do not embrace the potential for enhancing wildness, merely that 'holding the line' takes precedence (NTS, 2002). According to *S8*, the greatest threat to wildland today is unsympathetic developments. Wildland debates in Scotland have therefore remained significantly landscape-oriented. This led to accusations from some that wildland policy is too "planning-oriented" *(S17)*, an emphasis which was defended by others on the grounds that insensitive developments are the most immediate threat *(iii)*.

(i) *"[…] our key concern at the moment is still on the potential loss of more wildland in the future, rather than trying to get wildland back" (S8)*

(ii) *"[…] the mapping is in part to ensure that there's no net loss of wild land" (S12)*

(iii) *"The reason we're seen quite a lot as an organisation which concentrates on the visual side of things is because that's the thing that's most under threat at the moment" (S8)*

As policy making organisations, such as SNH and CNPA, are focussed on safeguarding wildland, they have no formalised view on issues of rewilding, which fall within the remit "managing those areas", rather than protecting them *(i) (S21)*. While organisations, such as CNPA, talk of an "increased area of the Park characterised as high or medium wildness" and the need to identify opportunities to enhance the wildness of the Park in the future (CNPA, 2012:30), there remains no guidance on how this might be achievable *(ii)*. On the ground, Scotland's rewilding movement - as per Chapter 3 - is driven by the private and NGO landowning sectors, rather than by a strategic policy direction *(iii)*. Ideas of enhancing or restoring wildland in Scotland remain un-strategic as the concept of rewilding is in its infancy. But nonetheless, "measures aimed at enhancing and restoring the wild qualities of damaged landscapes" (JMT, 2010a:1) are increasingly adopted and the proactive restoration of wilderness attributes is on the ascent *(iv)*.

(i) *[…] we've only thought about that in a reactionary sense, rather than a strategic sense, because we don't own land ourselves and so beyond lobbying for protection we don't have any management sway" (S8)*

(ii) *"[…] our focus at the moment in terms of rate of loss is trying to maintain this area [referring to demarcated area of their wildland quality map], but ideally you could see it expanding into this area [the area beyond that which is demarcated] and we do think about how [to do that] more and more" (S13)*

(iii) *"[…] if a landowner said at the present time 'what should I do for nature conservation' I don't think we'd get very bold suggestions from the bodies" (S17)*

(iv) *"It wasn't so long ago that 'wild' was a real pejorative, and now there is all this chat about how we can restore it" (S1)*

6.2.2. Landscape restoration

As detailed in Chapter 3, historically 'wildness' in Scotland has described an essential aspect of landscape character associated with remote, mountainous areas (Wrightham, 2002). With strong recreational roots, for many respondents wildland restoration has a distinct landscape edge *(i)*. The Unna Principles (Chapter 3) continue to be at the core of wildland concept as panellists spoke of removing, or modifying, unsympathetic developments (e.g. scars of bulldozed tracks) and in some instances removing

abandoned structures (e.g. unused stock fencing) and cultural artefacts to retain the sense of primitivism *(ii)*. Softening unsightly boundaries is also significant (e.g. thinning plantation edges) and for *S6* and *S7* maintaining unobstructed views was important. Because unrestricted access is critical to the Unna Principles, this strong landscape emphasis translates into a visitor management priority for some *(iii)*, while this was criticised by others who believe this draws attention away from critical habitat and species conservation issues *(iv)*.

(i)	*"[…] the visual aspect is really important, it has to be with things like the Beauly to Denny line going on" (CO5)*
(ii)	*"[…] we have removed significant quantities of fencing, and I know that [names another estate] have spent a lot of money putting an electricity line underground" (CO2)*
(iii)	*"[…]how the path network is managed is important in making sure that people don't become too crowded in one place, detracting from their wildland experience" (CO5)*
(iv)	*"[…] nature needs to be the most important of the two and right now things don't feel that way" (S6)*

6.2.3. <u>Restoring a degraded wildland ecology</u>

While 'wildland' has historically been dominated by the recreational perspective – where 'wild' has largely been used as a surrogate for 'remote' – it is increasingly being spoken of in other ways (e.g. naturalness of land cover, vegetation and native fauna) demonstrated by a significant emphasis on the ecology of wildland during discussions *(i)*. Landscape-scale restoration was a central discussion theme as respondents spoke of the need to revive Scotland's degraded ecology and to abandon upland land-use models of "growing sheep" and "subsidised erosion of the hills" *(S5)*, in favour of restoring a more natural ecology. It was widely agreed that Scotland's uplands are "totally and utterly degraded" (S6) *(ii)* (Chapt.3), resulting in a strong habitat and species restoration priority for wildland *(iii)* and for some, an expectation that wildland should be species diverse *(iv)*. Some respondents recognised the significance of this shift beyond landscape framing, alluding to potential for developing linkages between wildland and biodiversity *(v)* and the potential for wildland to deliver ecosystem health. In Scotland, as in Europe, wildland is increasingly being used positively to describe large, semi-natural areas *(vi)*. Given the significance of rectifying the current ecological simplification of the uplands to these discussions, it is apparent that for many respondents enhancing the 'wild' is synonymous with "improving naturalness" (CO2). Ideas of "renaturalising" the uplands are therefore important to this movement *(P1)*.

(i) *"[…] although it might look wild in the visual sense in that there might not be modern human development it won't be wild in a holistic sense because it's not a natural vegetation" (S8)*

(ii) *"Basically the roof is leaking and the windows have been kicked in…[referring to the Scottish landscape […] No river should be running through bare ground – it should have vegetation" (S17)*

(iii) *"While scars on the landscape from path erosion might be a problem visually and aesthetically, they may not have a great impact on ecosystem function […]. Functional value needs to outweigh visual value to really make a difference" (CO6)*

(iv) *"[…] we break the bracken down with cattle because if we didn't nothing else would get through and it would just be a bracken dominated landscape, which isn't what we're looking for at all" (S7)*

(v) *"[…] we're starting to think about the synergies between wildland and biodiversity and how we can reinforce these" (S13)*

(vi) *"[…] I think the best way to think of it [wildland] is as areas of semi-naturalness [where there is] ecosystem health and natural processes are dominant […] areas where ecological potential is fulfilled, that's what we aim for […] not some wilderness" (P7)*

Native woodland expansion represents the greatest on the ground 'rewilding' change, with aspirations to restore Caledonian wood at the heart of this movement *(i)*. Thus, many respondents described promoting the conversion of marginal lands to scrub and woodland through planting trials, large native woodland exclosures and a range of practices to encourage natural regeneration (Fig.6.3). The vision is for native woodland transitioning naturally into montane scrub in a landscape of "ecotonal habitats" *(P4)*. Diversity and structure across and within ecotones is considered critical for most *(ii)*, as is the continued protection of native biodiversity, particularly iconic species, such as capercaillie *(iii)* (Fig 6.4). For other respondents ecological function is more significant than diversity or nativity *(iv)*.

(i) *"We would like to see the Caledonian forest increased to let's say nearer its former extent" (CO7)*

(ii) *"[…] we should be seeking diversity of integrated habitat networks of native woodland and open ground communities" (T2)*

(iii) *"[…] black grouse and caper are an iconic part of wildland for us" (CO4)*

(iv) *"Managing for species I think is not on […] We need to focus on function at an ecosystem scale" (S5)*

Figure 6.3: Natural regeneration in the heart of the Cairngorms National Park where deer numbers have been reduced in recent years to allow young seedlings to develop past browsing height. *Photo © Julian Orsi.*

In broad accordance with Lawton *et al.* (2010), many respondents' wildland vision is to rebuild nature into a resilient ecological network by:

- Improving the quality of current sites by better habitat management *(i)*
- Increasing the size of current wildlife sites *(ii)*
- Enhancing connections between sites through physical corridors or 'stepping stones' *(iii)*
- Reducing pressures on wildlife by improving the wider environment, including buffering wildlife sites *(iv)*

In line with recent landscape-scale ecosystem approach initiatives, such as RSPB's 'Futurescapes' (RSPB, 2001; 2010a) or 'Living Landscapes' (SWT, 2010), landscape-scale connectivity is considered critical, resulting in considerable emphasis on the need for co-ordinated landscape-scale visions in which zoning is an essential management tool *(v)*. Furthermore, scaling-up in a temporal sense featured strongly in discussions too as the need for longer-term objectives and thinking was considered vital.

(i)	*"[…] improving the quality of the habitat is what it is all about" (P7)*
(ii)	*"[…] people need to work on bigger scales, and that might mean accepting a diminution of certain things, but it is so important that we increase our understanding of the area that natural processes operate across" (P4)*
(iii)	*"[…] and of course there are these National Forests, concerned with connectivity and so it would be nice to try and link up corridors eventually through the Cairngorms and maybe linking up with [names another estate] in the future" (CO2)*
(iv)	*"[…] and we're really trying to encourage and establish riparian buffers there" (CO6)*
(v)	*"[…] we had to zone those two areas a few years ago. It was completely unmanageable otherwise" (CO2)*

Figure 6.4*: Scotland's iconic capercaillie which is being closely monitored given its steady decline. This charismatic species is associated with a detailed Species Action Framework Plan and a considerable amount of targeted management. Photo © Neil McIntyre.*

6.2.4. Restoring nature's autonomy

In accordance with this landscape-scale emphasis, giving natural processes greater precedence is a key driver. For many, replacing prescriptive management measures with minimal intervention is therefore critical to delivering a "less managed landscape" *(i)*. Notions of 'self-willed land' are important (see Fisher, 2003; 2004a), and resonate with America's 'untrammelled' wilderness axiom (Chapt.5). In this sense focussing on 'processes' and having no pre-determined endpoints is important *(ii)*. Like Hodder & Bullock's (2009:40) idea of "aiming without a target", letting natural processes shape the landscape is considered central to restoring wildlands. Working *with* nature by giving greater autonomy to natural processes is seen as a means of creating resilient landscapes in an increasingly unpredictable future *(iii)* (Stephenson *et al.,* 2010). Any "definition that regards any permanent change from the status quo as a *loss* is going to be of little practical use for land and water managers over the next few decades except as a yardstick of defeat" (Dudley, 2011:148); a point that some respondents were all too aware of, stating we need to be "less damned precious" (S5). Disturbance ecology is therefore at the core of most rewilding aspirations as respondents described the need to move beyond micro-management and "gardening" *(CO2)* in conservation towards a holistic understanding of processes at a landscape-scale *(iv)* (Holden & Clunas, 2004).[2]

[2] Not all respondents were in agreement with the significance of landscape scale. One respondent, *S1*, argued that if 'rewilding' is about regaining 'wildness' then scale is irrelevant because 'wildness' can exist in one's back garden. It is often, therefore, the purpose of rewilding that necessitates scale; if the ambition is to harness ecosystem services through rewilding, or to successfully reintroduce predator species such as wolves and lynx, then it must operate at a landscape scale (*S1*).

The strategic shift away from deer management and woodland management plans towards one overall 'habitat management plan' referred to by a number of panellists is testimony to this.

(i) *"[…] it's about making these places less managed...trying to remove as much influence of management as possible" (P1)*

(ii) *"[…] we have no set end state for this process. We've deliberately stepped away from being prescriptive with targets, because we don't know what is going to happen" (S4)*

(iii) *"[...] stepping back and let nature take over, a nature knows best approach […] letting nature call the shots" (S12)*

(iv) *"rewilding to me is positive, in the sense that that almost sort of dead end, prescriptive management doesn't work […] recognising that managing for iconic and charismatic species is akin to 'gardening" (S9)*

6.2.5. Species reintroductions

For some the long-term ambition is to witness the return of extirpated species. However, while the reintroduction of species – particularly predators – has been the subject of ongoing media controversy in Scotland (Pyrnne, 2013), intriguingly it did not feature in these discussions of 'rewilding Scotland' as much as one might anticipate. Arguably, this is because panellists typically speak of their vision in relatively short-term frames and the restoration of habitat is the foremost concern at present *(i)* (first-stage rewilders). However, some respondents did allude to this long-term ambition, particularly as part of wider partnership programmes *(ii)*. While for the most part, this aspiration is based on the significance of missing keystone species to ecosystem functioning and resilience, for CO7 "the return of predators is an essential step to moving beyond wildland which isn't truly wild", in that it would allow the withdrawal of much of the deer culling management intervention (see Nilsen *et al.*, 2007 and Manning *et al.*, 2009), but also because the howl of the wolf in Highland Glens once again would make it "feel wilder". Others believe that even in the presence of a wolf reintroduction, human culling of deer will always be necessary *(iii)*, and those with a strong process and ecological functions perspective suggest that wildland initiatives should not focus on high-profile charismatic species when greater functional change can be achieved through other means *(iv)*. Respondents with a more perceptual wildland experience outlook did not consider reintroductions essential in the future.

(i) *"[…] we have a long way to go with the habitat side of things before we can start talking about stages beyond that in terms of the reintroduction of species" (P4)*

(ii) *"I could definitely see us engaging in reintroductions in the future, but more as a kind of collaborative thing, somebody else would need to take the lead on it really" (CO3)*

(iii) *"Even in the longer term I can't see wolves completely controlling the population" (CO4)*

(iv) *"[…] it shouldn't all be about top predators. Using cattle in the absence of wild ox would arguably have a greater effect" (P4)*

6.2.6. *Reconnecting people with nature*

Beyond this ecological discussion, respondents pointed out that this movement is not simply about nature; it is an opportunity to reconnect and re-establish better relationships with Scotland's wild places than the exploitative ones which have characterised history *(i)*. The idea that people have to have a place in wildlands was paramount for most respondents *(ii)*. Some consider the value of wildland to extend well beyond an expression of biophysicality by way of an ecological map; it is its spirituality – and associated benefits for human well-being – which makes wildland special *(iii)*. In accordance with the European Wilderness Working Group's (Wild Europe, 2013) understanding of wilderness, the idea that Scotland's wildlands need to provide opportunities for people to experience nature is important, and as such volunteering programmes were critical components of many (re)wilding visions *(iv)*. For other respondents the significance of people moves beyond the well-being attributes of wildland and embraces the idea that (re)wilding should reinvigorate local communities; local support and participation was considered vital, as was access. Contrary to criticism, "rewilding, paradoxically, should take place for the benefit of people" (Monbiot, 2013a:12). Even some of the more radical-end (re)wilding initiatives were quick to clarify that they had no interest in creating 'people-less' landscapes (see Section 6.6.3).[3] Similar to European perspectives in Chapter 5, some respondents emphasised the ecosystem services and social benefits of rewilding.

(i)	*"[rewilding is about] the need for humans to develop a new relationship, a different relationship with nature than the one that mainstream society has cultivated, which very much is one of domination and exploitation" (CO7)*
(ii)	*"As land managers we should be promoting public stewardship of wildland, not exclusion; humans have been part of the problem but can be part of the solution too" (T2)*
(iii)	*"[…] we're concerned with the spirit and the soul of the land, the wild heart" (CO7)*
(iv)	*"[…] the volunteering side of things is actually pretty important because it gets people involved gives them a connection with this place" (CO4)*

6.2.7. *Cultural-historical features*

For some respondents socio-historical features of wildland are important as they contribute significantly to wild character. Similar to Neale's (2004:40) discussion of "restoring about 1km of drystone walls […] to allow heath and upland scrub to develop on a large block of open upland, by grazing it seasonally with a few Welsh Black cattle" in the name of rewilding, some respondents spoke of cultural heritage in positive wildland terms *(i)*. Like Higgs' (2003) discussion of nostalgia in restoration, it is

[3] With the exception of T1 arguably.

apparent that wildland aspirations are, at times, clearly linked with ideas of 'sense of place' *(ii)*.

(i) *"[…] there's these pony path markers to help with extracting deer from wet ground, or boggy ground […] and they're all overgrown with moss now but you can still see them, and they tell a real story, they're of real interest" (CO5)*

(ii) *"[….] features of local distinctiveness are clearly very important to us too" (CO2)*

6.3. A matrix of rewilding practices

From the above, it is apparent that a wide range of attributes and aspirations are incorporated within respondents' views of rewilding and wildland. And equally, a diverse range of practices are presented in association with manifesting a 'wilder Scotland' *(i)*. Similarly to Chapter 5, a distinction between non-interventionist and more interventionist approaches – or perhaps, in the Scottish context, more passive vs. active - emerged. For instance, while some wildland initiatives are strongly committed to tree planting, for others this "smacks of tinkering too much" *(CO2)*. Therefore, some respondents describe rewilding as a largely passive approach, involving fencing an area, removing unnatural perturbations and relinquishing it to nature *(ii)*, while others maintain the significance of natural processes but are actively restoring pre-requisite conditions by planting trees or disturbing areas by introducing boar rooting ('taxon substitution', see Hansen *et al.*, 2010). Nevertheless, for most respondents, the aspiration is to become increasingly passive through time *(iii)*.

(i) *"I think it's [rewilding] about creating a sense of wildness […]. The question then is 'how do you achieve?', that and I guess that involves lots of different things" (CO3)*

(ii) *"If you are trying to create land that is as wild as possible that to me implies that you would have as little intervention as possible" (P1)*

(iii) *"We want to withdraw management and let nature take its course. We have to go on culling deer for now, but having lynx around would be better" (T1)*

The nature of rewilding practices is a source of contestation as respondents frequently cite practices which are directly opposing (e.g. the erection of fencing vs. the removal of fencing, the introduction of grazing pressure vs. its removal, prescribed burning vs. reducing muir burn). Some respondents therefore found themselves perplexed by other respondents' approaches. For example, the 'naturalistic grazing' model (see Hodder & Bullock, 2009; Vera, 2009a), which involves the removal of natural native grazers (deer) only to be replaced with non-native, semi-natural domestic stock, was particularly curious for some *(i)*. Although there are strong arguments in favour of

ecological ground disturbance (see Sandom *et al.,* 2013b; Hancock *et al.,* 2010), replacing a natural ecosystem component with an unnatural one is nonsensical for one respondent *(ii)*. Similarly, the place of planting and strongly-assisted regeneration in wildlands induced particularly polarised opinion *(iii)* bringing into focus debates over the use of aids such as planting fertilizers and tree guards to heighten the likelihood of recruitment success which were controversial for some on the grounds that they too detract from the 'organic-ness' of the rewilding process. This said, even the most non-interventionist rewilding approach in Scotland would be best characterised as 'minimal intervention', as opposed to 'hands-off' *(iv)* as the idiosyncracies of Scotland's wildlands (e.g. the degree of ecological degradation, the human history) are generally considered to necessitate a "treading lightly" *(S13)* approach. "If you can achieve your goals with minimal intervention then that's great […] but most of the time management is required" *(P6)*. Through the concept of 'minimal intervention' respondents reconcile some significantly interventionist practices with their aspirations for autonomous nature and accept that this wildland movement is about how these places are managed, rather than whether they are managed *(v)* (see Chapter 7).

(i) *"[…] it is possible that we will use cattle, but we're not hugely keen. They would be difficult to manage and it just feels a little bit too engineered" (CO2)*

(ii) *"It just seems a bit odd to chase out all the deer only then to put another grazing animal in there" (P5)*

(iii) *"[…] planting would detract from our desire to make this as unmanaged as possible"(P1)*

(iv) *"[…] realistically, it's a case of minimum as opposed to zero human anthropocentric intervention" (S19)*

(v) *"[…] wildness in the Scottish context at the moment has to be very much oriented towards active management, or sort of reviewing how active management happens, rather than whether or not it happens" (S8)*

Table 6.4 details the nature of rewilding practices cited. These are arranged in accordance with the key restoration emphases above, but the fact that many practices can be classified within multiple areas (e.g. minimising ATV use) demonstrates the complexity of wildland visions and the significance of broad wildland management principles. Apart from these specific practices, a broad spatial management approach is considered important *(i)*, as is the need for evidence-based decision making *(ii)*.

(i) *"[…] we have an area called the 'intervention zone' which is a buffer that we've mapped which is within 250m of all seed trees" (CO3)*

(ii) *"[…] a map made database which means that for any piece of work we can say 'right, what are the likely impacts, within this area, of this piece of work according to the records we've got" (CO3)*

Restoration area	*Key values; 'wilder' in what sense?*	*Example practices*	*Supporting quotes*
Restoring and renaturalising ecological processes	…..more resilient wildlands …..more autonomous wildlands	• Removing physical barriers • Reintroducing keystone species • Reducing intensive practices (e.g. muir burn) • Creating deadwood	*"[…] we high topped a thousand trees, so that's immediately contributing to deadwood" (CO3)* *"[...] a reduction in intensity of muir burn perhaps in certain areas" (S12)* *"[…] we've just completed a round of reintroduction of a pine hoverfly" (CO3)*
Restoring and conserving ecological integrity	…..more biodiverse wildlands …..more 'natural' wildlands …..more integrity in wildlands	• Tree planting trials; creating exclosures around natural regenerating seedlings, scarify and ground preparation • Reducing grazing pressure • Using domestic stock (e.g. cattle) for disturbance • Controlling non-native species • Controlling dominant species (e.g. bracken) • Constructing artificial habitats (e.g. marsh areas) • Creating glades and respacing e.g.thinning) • Mapping (e.g. the natural treeline)	*"[…] we're considering treatments like cutting heather and preparing the seed bed and different levels of scarification" (CO2)* *"[…] we completely destocked that area" (T3)* *"[…] the plan is to put cattle in there to break up the ground" (CO4)* *"[…] we try to use minimal vehicles" (CO1)* *"[…] we're controlling the bracken" (T1)* *"[...] blocking waterways, thereby creating pools right the way up this spring" (S17)* *"[…] we've done quite a bit of thinning there" (CO5)*
Restoring and protecting landscape integrity	…..more perceptually wild wildland …..more aesthetically wild wildland	• Removing physical boundaries • Thinning harsh plantation edges • Restricting construction of new paths • Removing unsympathetic developments • Restricting vehicle access	*"[...] taking down redundant structures" (CO1)* *"[…] it became almost like a landscape gardening exercise" (CO2)* *"We've taken out 35 km of linear track and either re-landscaped or restored footpath width" (CO2)* *"[…] we're restructuring and replacing the commercial woodland" (CO1)*
Restoring people's relationships with wildlands	.....more humility in wildlands …..more connectedness with wild places	• Community engagement (e.g. local consultations) • Volunteer groups • Environmental education • Limited visitor facilities	*"[…]a twelve week consultation where we asked people what they thought, what their aspirations were" (CO4)* *"[…] we're are just getting the car park done up and there's interpretive panels going up" (CO5)* *"[…] we want to provide interpretation, but it needs to be low key so it doesn't detract from the wildland experience" (CO5)* *"[…] the volunteering stuff is hugely important" (CO7)*

***Table 6.4**: Management practices associated with panel estates and how they connect with different wildland values.*

6.3.1. Trees, deer and fencing

The most commonly cited management themes relate to trees, deer and fencing. With the commonly shared objective of promoting woodland cover, discussion quickly turned to deer management. 'Excluding deer' is a central practice associated with Scotland's wildland initiatives making issues of fencing a critical theme. However, deer management in wildlands elicits some very polarising positions. Many estates referred to a '*presumption against fencing*', which includes the active removal of already existing fencing due to its potential to detract significantly from a wild aesthetic *(i)* (Fig.6.5). The perceived controversy associated with this in terms of knock-on effects on neighbouring estates (e.g. through a vacuum effect associated with deer movements, see Bullock, 1999 and Albon *et al.*, 2007) is substantial, making this a critical issue for respondents. Given such contestation, other respondents opted for pragmatism on this issue, acknowledging the landscape impact of fencing but suggesting that given the lack of communication between neighbouring estates, in some instances fencing is a "necessary evil" (*S8*) *(ii)*. For others, regeneration in the absence of fencing remains the priority *(iii)*.

(i) *"We've removed close to 30,000 meters of fencing in recent years […] I would imagine by possibly 2014-2015 there'll be no fences here" (S6)*

(ii) *"[…] if you've got deer on your land you should be able to shoot them to a level you want. But there are potential perceived, or real impacts, on neighbours and these become more and more contentious over time, so there may be stock fencing"(S13)*

(iii) *" [we aim] to manage the deer and the woodland without fencing, and that's what our habitat management plan will lay out for us" (CO4)*

In direct contrast, other respondents cited the erection of fencing to form exclosures which protect areas of regeneration from browsing as an example of 'rewilding'. Enhancing wild quality through the addition of man-made structures appears paradoxical, as in Chapter 5, and this is a pervasive theme of this thesis. Whether erecting it or removing it, fencing is a significant part of Scotland's wildland debate because of the fraught interactions between deer management and woodland restoration (see Section 9.4.3, Chapt.9).

***Figure 6.5**: Deer fencing on Ben Wyvis demonstrating its potential to detract from the sense of wildness in upland settings. Photo © Holly Deary.*

6.4. The purpose of rewilding: motivations

The diversity in emphasis above is matched by significant variance in underlying motivations. A range of reasons for restoring wildland were offered and are broadly grouped in (Table 6.5). Although *T1* highlighted anthropocentric arguments in the Delphi synthesis, the significance of the 'human-induced loss' criterion expressed by most respondents demonstrates the importance of redressing past mistakes. For instance, the fact that people caused the demise of the Caledonian pine forest was the most commonly cited argument for its restoration. Other respondents provided strongly objective ecological rationales, while others favoured socio-economic arguments. Perhaps less of a motivation in itself, but certainly a requisite for rewilding success, was the notion of reconnecting people with the spiritual, recreational value of wild places.

Theme	*Explanation/Rationale*	*Supporting quotes*
Ecological	*Restoring ecosystem health*	*"a living, enriched ecosystemic biodiversity" (S19)*
Socio-economic	*Harness ecosystem services associated with wilderness*	*"[…] so there's a business model sort of argument in there" (S1)*
Philosophical	*Moral obligation to 'right the wrongs'*	*"[…] humans have changed it so much that putting back what we got rid of is perfectly valid" (CO7)*
Spiritual	*Human well-being associated with connection with wild nature*	*"[...] there is tremendous spiritual value in wild places […]. Part of what we're about is reconnecting people with nature" (CO7)*
Ecocentric	*The intrinsic worth of nature for nature*	*"[...] we should have areas which we just regard as wild" (S17)*

***Table 6.5**: Rewilding motivations in Scotland.*

Divergent understandings of rewilding are discernible on the basis of different fundamental value orientations. To some extent, therefore, the Total Economic Value Framework (see Pearce & Moran, 1994) is useful for considering the range of motivations steering rewilding approaches. Table 6.6 explores future wildland values in accordance with this framework, thereby demonstrating the range of underlying rewilding philosophies, which give rise to the diversity in management emphases above. While the inherent natural integrity of wild places is critical, it is apparent that some managers seek to "enhance those aspects of wilderness that are pleasing to man, with sociological and cultural definitions taking precedence over biological concepts" (Hendee & Stankey, 1973:535) (Chapt.7). Some respondents take a significantly more utilitarian perspective, asserting the need for wildland from an ecosystem services point of view, suggesting that the supporting and regulating services of wildland in particular are vital to human existence (see Bonn *et al*., 2009).

	Rewilding Values	*Supporting example*
Non-human value		
Existence	*The value of wildland for nature*	*"[…] this is primarily nature for nature's sake, because nature needs champions" (CO7)*
Non-use values		
Bequest	*Values associated with the knowledge that the wild land resource is preserved for future generations*	*"[…] future generations will be able to come here and have a wild experience" (CO4)*
Option	*Values associated with potential use in the future, in accordance with direct or indirect values*	*"[…] nature is still in retreat all over the planet. If that doesn't change humans won't be able to survive because we're undercutting our support systems everywhere" (CO7)*
Intrinsic	*Values implicit in the knowledge that this environmental resource simply exists, and what it says about human relationships with the natural world*	*"[…] minimal intervention for the sake of having places which are for nature, rather than for people" (CO1)*
Use-values		
Direct use	*Values attributed to the direct use of the wild land resource, extractive or experiential, e.g. field sports, recreation*	*"[…] this special quality of wildness is hugely important to the economy of the National Park (S12)*
Indirect use	*Values associated with the ecosystem functions and services provided by wild land, e.g. carbon sequestration, flood protection*	*"[…] we're looking at how to put together a flexible, economic based audit for wilderness areas to increase" (S19)*

***Table 6.6**: Respondents' 'wildland values' in accordance with the Total Economic Evaluation framework (Pearce & Moran, 1994).*

For the more purist ecocentrists, this movement is about restoring the 'Wild heart of the Highlands' (Featherstone, 1997) for its own (non-human) sake, rather than human-value *(i)*. Rewilding is valuable as an expression of humility and for what it says about society, rather than for any tangible value relating to its composition or services *(ii)*. Not surprisingly, opposition to commercial exploitation was most marked among NGO landowners, while the socio-economic arguments were more pervasive in the private and community owned land sector.

(i) *"We need some spaces where nature takes precedent" (CO1)*
(ii) *"[…] if there's such thing as a philanthropic asset then that's what we are" (P7)*

The significance of both instrumental and non-instrumental value demonstrates the pertinence of both biocentric *and* anthropocentric wilderness management philosophies to this debate (see Hendee & Stankey, 1973). While many panellists view biocentric values as the core of their rewilding vision *(i)*, they acknowledge the need to adopt elements of anthropocentric philosophy too, recognising the significance of human experience to the social acceptance of rewilding *(ii)*. Like the 'Wild Ennerdale' approach (Browning & Oakley, 2009), Scotland's wildland movement is both ecologically-based and people-based *(iii)*; encouraging natural processes to shape the landscape and "seeking ways to increase the sense of wildness by limiting the visible impact of people […] but at the same time encouraging the involvement of people in employment, economy and recreation" (Browning & Yanik, 2004:35).

(i) *"To my view it is about habitats. If you can manage a habitat in a more natural way then eventually it may become wild" (CO7)*
(ii) *"[…] whatever 'rewilding developments' take place, they have to be justified partly in terms of human appreciation, which means access should remain a high priority" (T2)*
(iii) *"[...] we need it to be both biocentric and anthropocentric […] it's a bit like a biosphere model. We need these wilderness cores and buffer zones" (CO7)*

6.5. Horses for Courses: divergence in understanding

From the information presented in the first half of this chapter, it is clear that there is considerable divergence – and even diametric contradiction – within the understandings of what wildland is, or should be, in Scotland. There is no clear or agreed vision the future of Scotland's wild landscapes. On the contrary, the question of what the vision should be, in policy and practice, remains a source of continued debate *(i)* (CNPA, 2011a). This lack of clarity was alluded to by *S14* who described the curious situation

that although significant native woodland expansion in wildlands has featured in Scottish conservation policy for a long time, there is no reference to the term 'wild' in the National Forestry Strategy. Broadly speaking, this movement is about "reviving the land" *(CO4)* - restoring natural processes across vast areas, increasing native woodland and montane scrub and enhancing the sense of wildness. Similar to Chapter 5, Scotland's wildland debate is multi-dimensional, with ecological, perceptual, cultural and historical dimensions. As respondents talk of their aspirations using vague, encompassing descriptors *(ii)*, the reality that 'restoring the wild' can be mean different things in different contexts becomes apparent *(iii)*. 'Restoring wildland' is multifaceted *(iv)*.

(i)	*"[...] the Government and SNH can't make up their minds […] making it very difficult to know where the thrust is […] It does make it difficult to get real traction with this" (S17)*
(ii)	*"[…] we would like the wild areas to be even more wild" (S12)*
(iii)	*"[…] for one person means not letting any scruffy birches get in here, whereas to someone else it means you manage this land to the benefit of the land not the owner" (S17)*
(iv)	*"[...] it takes lots of different elements, like the removal of things like pylons potentially, but also from an ecological point of view we're trying to encourage woodland expansion" (S20)*

Clearly then, Scotland's rewilding narratives are not homogenous; this is a multi-faceted and nuanced movement as visions for a wilder Scotland vary according to the wishes of individual owners *(i)*. There are many routes to a wilder Scotland; the appropriateness of each is dependent upon underlying philosophical persuasions *(ii)*. With a "range of options for management, the choice […] will depend on the other features of the area as well as its wild land quality" (NTS, 2002:6). How one defines rewilding will therefore "depend on what your existing landscape looks like […] and how you would change that landscape" *(CO5)*. (Re)wilding perspectives are, therefore, contingent upon different ecological and landscape conditions, and degrees of degradation *(iii)*; they are 'path dependent' in that the nature of rewilding is, in part, determined by past events. It cannot mean the same thing to all respondents, and nor should it become a "straitjacket" for estate's with divergent objectives *(iv)*. Scotland's wildland movement is pluralistic, a point which becomes increasingly apparent in subsequent sections as issues such as the place of crofting in wildland continue to yield different perspectives.

(i) *"[...] it's quite often relying solely on the interests of the owners" (S17)*
(ii) *"[...] although it appears to be a wild place there are many different people with different interests. That's the thing in a lot of land areas where there's large estates with very few people [...]. It's easier to manipulate and develop and have your own vision of the landscape" (T3)*
(iii) *"[Rewilding is]...very much defined by the land that you have to play with. What you can do with something is already largely pre-defined" (S1)*
(iv) *"Why should it have to mean just one thing? Why can't it include a range of approaches? [...] You can't put one meaning on something which has gone off in so many directions" (T1)*

Similar to the international discussion (Chapt.5), as different wildland initiatives prioritise different parameters of 'wild', different visions of a future wild emerge. Different ideas of wildland appeal to initiatives of different philosophical persuasions. Thus, ecological integrity is the core of some panellists' visions as they strive to restore semi-natural woodland, associated biodiversity, trophic cascades and ecological connectivity *(i)*. However, for others, the primary concern is landscape aesthetics, the removal of intrusive structures, the restructuring of commercial plantations and the restoration of a sense of wildness *(ii)*. Taylor (1995b:25) differentiates between two particular understandings of 'wild' which can arguably be mapped onto the passive and active management approaches in Section 6.3:

- Wilderness as a 'wasteland': "a great tract of land left completely alone for natural forces to hold sway"
- A wilderness of nature: "a large areas where, by a minimum of human intervention and management, a near-original ecosystem is re-created for its own sake"

(i) *"[...] there's still a big focus on trying to achieve connectivity with [names another glen], that's our main focus right now" (CO4)*
(ii) *"[...] some people look at it as just a visual thing, others look at it from a biodiversity perspective" (S8)*

One thing that is particularly apparent is that the wildland at the core of Scotland's multiplicitous wildland movement transcends the limits of a purely biophysical understanding of wild places, or an exclusively constructivist framing *(i)*. Like the complexity of Chapter 4's international wilderness framings, wildland is associated with a definable, quantifiable set of wilderness attributes *(ii)*, an ethereal, personal value associated the *sense* of wildness *(iii)*, an abstract existential value of minimal human influence *(iv)* and a historic, cultural artefact *(v)*. As such, the degree to which this movement focusses on biodiversity, experience or some other philosophical and symbolic value associated with humility in management varies significantly.

"Wilderness today is neither simply a biophysical reality nor a conceptual abstraction but a blend of the two; 'real world' wilderness and ideas of wilderness exist in a state of co-dependence" (Warren, 2009b:254). This is a tricky terrain that any future rewilding strategy will need to negotiate.

(i)	*"[…] the difficulty of wildness as a special quality is that yes, there are physical qualities it's associated with, but it's also just a very personal thing" (S12)*
(ii)	*"[…] there's a distinct set of landscape attributes that we associated with wildland and that we've had some help trying to map" (S20)*
(iii)	*"[…] 'wildland' is not necessarily referring to the condition of the landscape, but is determined by the observer" (T2)*
(iv)	*"[…] trying to remove as much human influence of management by humans as possible" (P1)*
(v)	*"[…] when up there I appreciate the enormity of the landscape, I appreciate it's natural and wild quality, but I also know it's not natural, that it's the product of cultural practice" (T2)*

6.6. 'Rewilding' Scotland?

Given the widespread reluctance to adopt 'rewilding' terminology, revealed in Chapter 5, can Scotland be considered to be *rewilding*? The discussion above largely accords with Carver's (2007) interpretation of rewilding in a UK context which he defines as:

- promoting wilderness qualities
- enhancing and recreating semi-natural habitats
- promoting ecological processes in near-natural areas
- securing ecosystem services.

But would respondents use this term to describe their actions?

As shown in Chapter 5, many respondents showed no familiarity with the term rewilding. P5, for example stated "it's not a term I'm ever heard before". Discourse analysis revealed that it is not employed in Scotland's policy sector at all, not even in connection with the reintroduction trials for extirpated species (e.g. the Scottish Beaver Trial (Foulis, 2005)). Furthermore, most respondents demonstrated little consideration of the conceptual framing of wildland initiatives or of how they would describe their vision and approach, stating that "[we] haven't really thought about what we'd call it" *(CO2).* Upon reflection, some stated that they were comfortable with the rewilding label (most notably NGO organisations, e.g. *CO1* and *CO2*), suggesting that it simply, and intuitively, describes the process of "making more wild" *(S13) (i)*. Therefore, while

'rewilding' was a very specific conservation paradigm in Chapter 2, with specific meaning, in this practitioner domain it has a far broader interpretation, being used for anything *"from removing fencing to reintroducing species" (S8),* or simple native woodland expansion *(ii)*. Where recognised in Scotland, rewilding is understood in a vague and sometimes ambiguous sense *(iii)*. As suggested by one respondent, this is because rewilding is a process, rather than an objective itself *(iv)*. It is the *process* of moving towards a self-sustaining ecosystem with low perceptible anthropogenic influences.

(i) *"[…] rewilding is a useful, clear term – restoring to the wild" (CO1)*
(ii) *"[…] because promoting native woodland expansion is now a common practice in forestry, Scotland can be considered to be rewilding*" (*S22*)
(iii) *"The reason it [rewilding] is so dangerous is because it can be interpreted in so many different ways" (P3)*
(iv) *"[...] wildness is perceptual. Wilderness is an ecosystem with very small evidence of anthropogenic influence and rewilding is a process which may take you to either one of these two states" (S1)*

In contrast, for many respondents the 'rewilding' term is not viewed favourably *(i)*. Despite the fact that 'restoring wilderness values' is a critically emerging ethos in the uplands, many respondents were cautious of the term, suggesting it is an academic term, with little resonance within practical land management circles *(ii)*, or it is an emotive way of describing a political movement, rather than on the ground change *(iii)*. Either way, "the term is all wrong" *(S5)*.

(i) *"Rewilding – I wouldn't touch it with a bargepole" (S5)*
(ii) *"[...] it's the sort of thing that is discussed at seminars of environmental groups and that" (S2)*
(iii) *"[…] rewilding sounds more political than practical, in that it would only really get used in an emotive fashion as part of a bold and sweeping statement regarding large scale land management" (T2)*

Intriguingly, despite strong aversion towards 'rewilding', the attempts that respondents made at defining it *(i)*, in many instances, resonate strongly with respondents' descriptions of their own wildland aspirations. Some respondents alluded to this similarity themselves *(ii)*. Interestingly, *S16* describes a dislike of rewilding, but endorses a vision for enhanced vegetative cover in upland environments *(iii)*, making it apparent that some respondents are in sympathy with the broad vision of rewilding – i.e. the concept of holistic landscape-scale management *(S8)* (Brown *et al.*, 2011; Carver, 2013) - but do not believe rewilding accurately or appropriately encapsulates this. As *S13's* anecdote *(iv)* implies, it is not the vision to restore ecosystem health which is met

with antipathy, but arguably the fact that rewilding has its roots in the idea of 'wilderness'.

(i) *"I think it probably describes the restoration of wild processes […] the idea of putting things back which should be there" (P1)*

(ii) *"[…] it probably is what we're doing, but that's just not what we would call it"(CO2)*

(iii) *"[...] so rewilding, just not interested in rewilding, but very much interested in increasing the diversity of the vegetative cover of Scotland with the proviso that there will always be bits which are better left without trees on them – open moorland or high tops where trees wouldn't grow anyway" (S16)*

(iv) *"[a local landowner] he really doesn't like those terms [wild/rewilding] at all, and I said to him 'but that's exactly what you're doing....because you're effectively restoring, and he just said 'oh, we're just planting trees, we're not rewilding'. I said 'well, where trees are the climax vegetation then by getting it back to trees that is effectively rewilding', but he didn't like that" (S13)*

A number of reasons for this animosity and hesitancy towards rewilding were identified and explored during discussions. These key critiques are presented and exemplified in Table 6.7.

'Rewilding' reservations		
Ambiguous terminology and diffuse meaning	'Rewilding' is vague and meaningless; there is no clear understanding of what it means, nor how it will be manifested in the landscape; furthermore, the term had been hijacked by radical, fundamentalist ideas	*"[...] we either need to come up with a new name which isn't tarnished or it's got to be reclaimed as a positive thing to do" (S8)*
Lack of pertinence to Scotland's distinct wildland context	Scotland's unique natural and cultural history, and distinct 'wild land' terminology appears incompatible with purist, untouched 'big wilderness' ideas which rewilding is thought to be founded upon	*"[...] maybe those kinds of purist ideas make sense elsewhere in the world, like America, but not in Scotland [...]. This isn't wilderness" (T2)*
Lack of conceptual coherency *	'Rewilding' elicits a number of pervasive environmental paradoxes, such as the implication that it aims to 'turn the clock back'	*"[...] it just doesn't make any sense to always be looking backwards"(P7)*
Integrating Agendas **	The relationship between the 'wild land' agenda and the 'rewilding' agenda needs to be empirically established, as does the place of compatibility of 'rewilding' with broader conservation strategies such as the biodiversity agenda	*"You can't keep all habitats in 'favourable condition' all the time if you're working towards a dynamic ecosystem driven by natural processes" (S9)*
Clashing Imperatives	The uncompromising, ideological nature of rewilding suggests it is likely to be incompatible with a number of recent strategic land use emphases in Scotland and with an integrated land-use future	*"[...] the implication with rewilding is 'very few people', and I think that's where it might have political issues with the fact that there's a coloured history of depopulation, and continued depopulation, and how that sits with people's ethos" (T3)*

***Table 6.7**: The main reservations about applying 'rewilding' to Scotland's uplands.*
****Explored in Chapter 7***
*****Discussed in Chapter 9***

These critiques are explored in greater detail.

6.6.1. *Ambiguous terminology and diffuse meaning*

6.6.1.1. *Semantics: A North American Legacy*

The North American roots of 'rewilding' were referenced by a number of respondents *(i)*. The legacy of these perceived American origins has resulted in rewilding becoming largely synonymous with the reintroduction of carnivores (most notably wolves to Yellowstone). Given that Scotland is socio-politically reluctant to seriously discuss the merit of carnivore reintroduction *(ii)*, the term 'rewilding' is considered to generate unnecessary anxiety *(iii)*. Furthermore, the first time that the general public are likely to have received exposure to the term is in association with the contentious Alladale Wilderness Reserve in Northern Scotland which has generated considerable controversy through its plans to fence a large area of popular recreational land causing uproar amongst the rambling fraternity over access rights *(iv)* (Atkinson 2007; Edward, 2008).

(i) *"[...] rewilding for me comes from an American beginning where they started this" (S5)*

(ii) *"[...]it's hugely emotive and I don't think bearing in mind the controversy with the beavers that Scotland is quite ready for that discussion" (S12)*

(iii) *"[Rewilding is] a dangerous term tactically because it tends to have these connotations associated with it. I think of it particularly in association with carnivores […]. A lot of people might think it's the thin end of the wedge […] 'start small and then we'll get the wolves in'" (T1)*

(iv) *"[…] 'rewilding' has almost got a bit of a bad name amongst mountaineering circles because it's associated with a place not too far from here and certain access issues"(S8)*

When it is not associated with the reintroduction of predators or fencing people out, rewilding is understood to mean land abandonment and zero-extraction. This is considered to be at odds with the strategic direction for the uplands politically at present (see Scottish Government, 2011), particularly the 'Scottish Native Woodlands' movement with its concern for "practical, functional and sustainable use of native woodlands" *(S20)*. While minimal intervention is an important part of wildland narratives, delivering a wilder future is largely associated with promoting wilderness qualities through management and intervention, rather than abandonment *(i)*. As *T3* stated, 'wildness' as a management objective is supported - "it is in our management plan" – but its 'abandonment' connotations are contentious, particularly in light of continuing cultural sensitivities in the Highlands associated with evictions during the Clearances which resulted in today's 'secondary wilderness' (Section 6.6.3) (Aitken *et al.*, 1992; Carver *et al.*, 2002). Respondents also raised concerns that rewilding is "a bit too alternative" *(P1)* and "out there" *(S1)* with spiritual overtones *(ii)*. 'Rewilding' is considered the domain of "radical fundamentalists" and extremist environmental groups

(iii), a "wacky idea" which oversimplifies the complexity of managing Scotland's wild places *(S1)*. Rewilding is thus freighted with negative connotations. Reclaiming the term will therefore be tricky *(iv)*.

(i) *"[…] we should be, being more objective about what we want to achieve and what we are capable of doing […] unless you're prepared to build a fence through the lowlands and then remove all the population, control all the deer and throw a few wolves in and then wait five hundred years, well let's be realistic, this requires management" (S14)*

(ii) *"[…] rewilding is more emotive […]. With rewilding you can imagine someone going in to meditate" (T1)*

(iii) *"[Rewilding]…only means something to a few zealots" (S16)*

(iv) *"[…] people supporting the holistic approach have a bit of a job to do to regain the term rewilding from narrow definitions" (S8)*

Because rewilding is a stigmatised term in Scotland it is unavoidably contentions, even if it does quite intuitively explain some respondents' visions *(i)*. In light of potential public nervousness around 'rewilding', the importance of language and labelling emerged as a central theme *(ii)*. Respondents were conscious of the significance of the terms they employed to describe their work *(iii)*. Although, in accordance with Bullock & Hodder (2009), *S13* and *S19* believe there to be marketable potential in rewilding, for most its academic roots mean that "talking about wilding and rewilding makes it sound a bit jargonistic" *(S7)*. Accordingly, respondents spoke of the importance of tailoring the framing of wildland restoration to certain contexts and audiences *(iv)*.

(i) *"The ultimate objective is exactly the same as if you were talking to a, if you like, fundamentalist wild land prophet who hates the idea of socio-economics and valuation. It's the same objective […] but you talk about it differently" (S19)*

(ii) *"Language is a huge problem […]. We need to be careful with these kinds of terms" (S9)*

(iii) *"[…] it is important to think about what the general public are going to take from how we talk about it" (S12)*

(iv) *"If people don't like the term wild then don't use it. You talk about the restoration of natural ecosystems instead" (S19)*

6.6.1.2. Rewilding nomenclature

Instead of rewilding, a broad range of terms have been used to describe this wildland movement; 'ecological restoration', 'landscape-scale restoration', 'wilding', 'enhancing wildness', 'managing for wildness', 'wildland management' and the list continues. Within this rewilding nomenclature the expression 'enhancing wildness' is particularly

significant *(i)* as respondents suggest it recognises the spectrum of wilderness values in a way in which rewilding cannot; by removing the retrospective element 'enhancing wildness' sounds "less all or nothing" *(S20)* (Chapt.7). Furthermore, two respondents believe it embodies the idea that they are focussed on the sense of wildness, from an experiential landscape sense, therefore inadvertently accepting that these landscapes are by no means wild in an untouched, *terra nullius* sense *(ii)*. While this distinction is largely semantic, semantics are important against the sensitivities of the 'emptiness' in the Highlands.

(i) *"[We're] allowing the valley to develop as a wilder valley […] we tend to use language like developing and enhancing the sense of wildness" (S7)*

(ii) *"We've been very careful to use the word wildness […]. We're not talking about a piece of land, we're talking about a sense of wildness" (S20)*

For others, the 'wild' component of rewilding is problematic because "it immediately opens up the whole debate of "'is it wild', 'when was it wild'" *(S20)*. In terms of the labelling issue above, some respondents favoured talking in ecological restoration terms *(i)* because "wild means so many different things these days it no longer has any meaning" *(P4)*. Ecological restoration offers a vision of a restored healthy landscape without culturally entrenched connotations of a 'sterile landscape' devoid of human presence, rewilding without the contentious 'wild' *(ii)*.

(i) *"[…] even if you were looking at the very kind of public debate area of restoring lynx or wolf or whatever, that to me is just ecological restoration" (S17)*

(ii) *"I would much rather speak in terms of 'native woodland restoration' and 'protection and enhancement of key habitats and species', all in the context of involving local communities and promoting responsible access, rather than exclusion" (T2)*

Ecological restoration is regarded as having scientific foundations and therefore "puts ecology in its proper place in land management" (*S22*). Intriguingly, while a central rationale for rewilding in Scotland is that it moves away from the prescriptions and language of science (Bullock & Hodder, 2009; Whitbread, 2010), it is the fact that rewilding is "unscientific" *(S16)* which unnerves respondents most. Rewilding is accused of being unobjective and ideological, based upon the logic of "suck it and see" *(S3)* and faith in the unknown. Rewilding challenges the normative prescriptions which have been the mainstay of Scottish conservation since its inception. While ecological restoration implies considered, purposeful action guided by scientific baselines, "rewilding tends to be a case of just see what happens" *(S12) (i)*. Beyond the place of science, restoration is understood to be more bound up with notions of ecosystem

services and instrumental values than the spiritual core of rewilding *(ii)*, and rewilding is perceived to be a far larger scale commitment than ecological restoration *(iii)*.

> *(i)* *"[...] rewilding does tend to assume letting go of large areas just to see what happens, whereas ecological restoration – to an extent – is about quite small areas. It's about restoring specific habitat to what it could be" (S12)*
> *(ii)* *"By and large I think ecological restoration is still probably more bound up in practice with anthropocentric activity [than rewilding]" (S19)*
> *(iii)* *"[...] there's no point rewilding your back garden. Rewilding is a landscape scale commitment to natural processes, whereas ecological restoration might just focus on connectivity within a smaller area " (S22)*

The relationship between rewilding and ecological restoration is demonstrably complex and warrants further evaluation. However, it is apparent from this Scottish perspective that ecological restoration can be considered a critical *part of* the rewilding process. As *CO7* explained, ecological restoration is a critical part of their vision to restore the capacity for the land to heal itself. Ecological restoration therefore provides the basis for "restoring the land to be more capable of dealing with the future" *(CO7)* in a wilder, more autonomous sense *(i)*.

> *(i)* *"[...] ecological restoration, I always say, is humans supporting natural process, and rewilding, I would say, is that process of transition […] from domination of ecosystems to one in which natural processes prevail. And rewilding is the journey to get there" (CO7)*

6.6.2. <u>Scotland's distinct wildland context</u>

With these North American roots, rewilding is considered to be about 'big wilderness' (i.e. the received wilderness idea (Chapt.2)). It's applicability to Scotland's *wildland* context, with its distinct natural and cultural history, was a critical theme *(i)*. While in land management circles in Scotland, notions of 'wild' in a 'natural areas' sense are gaining resonance, the idea of 'wilderness' remains somewhat pejorative *(ii)*. When rewilding is connected with 'wilderness' in the Scottish context it becomes an ideological, Sisyphean and inappropriately purist idea *(iii)*, resulting in accusations that it would only be subscribed to by people out-with the land management sector, with no understanding of the reality of Scotland's wildlands *(iv)*. Rewilding based on American ideas of wilderness would be unable to acknowledge the idiosyncrasies of Scottish wildland as it was argued that that would necessitate the removal of cultural heritage, a concern fuelled by relatively high profile instances of this *(v)*. Equally, for some respondents, labelling these places as 'wild' implies they are unmanaged, thereby ignoring the historical significance of people and management to the uplands. The

wildlands of Scotland are largely the product of traditional management leading to suggestions that management maintains aspects of Scotland's wild quality *(vi)*, resulting in the contention that traditional wisdom should be worked into wildland restoration *(vii)* (Chapt.7) (MacMillan & Leitch, 2008).

(i) *"[…] that might work in these huge wildernesses in America, but we're talking about a completely different context, a completely different type of landscape here" (CO4)*

(ii) *"[…] in terms of rewilding I think the big issue is, well of course, the whole 'wilderness' pejorative term" (S13)*

(iii) *"[…] it just sounds a bit too idealistic […]. In reality some pristine wilderness can never be restored" (T2)*

(iv) *"[...] it's a theoretical concept dreamt up by people who don't have any real sense of what makes the landscape support the uses that it does support and which makes it look the way it does" (S16)*

(v) *"[…] the fact that [names another estate] are considering the removing [names a specific bothy] doesn't sit well with me and suggests that they have quite a dangerous interpretation of wildland" (CO4)*

(vi) *"....we're a National Park because of the quality of the landscape and the biodiversity, and that is largely a consequence of management. Landowners can't be doing everything badly" (S12)*

(vii) *"[…] I would like to see the people who have worked this land as part of this better future […] using their knowledge" (S5)*

But, while there are instances of purist wilderness values amongst panellists *(i)*, most wildland estates readily acknowledge these cultural facets of wildland, asserting that, in most instances, this rich heritage does not preclude the Highlands from being 'wild' *(ii)*. Wild and cultural are not viewed as antithetical concepts necessarily *(iii)*; "[…] wildness is not [therefore] abrogation of human involvement" *(S16)*. Wildland advocates were therefore equally quick, in instances, to assert the importance of protecting cultural wildland values and to embrace the extensive history of environment-human interactions in wild places, as opposed to viewing them as a mythical, untouched wilderness *(iv)* (Chapt.6). Accordingly, there are numerous examples of cultural features perhaps contributing to wildland value, rather than detracting from it *(v)*. But, by labelling these wildland aspirations 'rewilding' they become connected with wilderness, and this - despite panellists' appreciation of the long history of use - makes their visions sound as if they're striving for a pristine wilderness.

(i) *"[…] but cultural artefacts would undermine our vision" (CO7)*

(ii) *"[…] I think this whole discussion shows that just because it is a cultural landscape doesn't mean it hasn't retained a sense of wild" (P3)*

(iii) *"[…] it is wild in a sense, but also cultural […] I don't think it has to be one or the other" (S12)*

(iv) *"[…] although we're talking about creating wilderness, we have a lot to thank the traditional sport and the like for because that shaped these places [….]. We don't want to lose that and we're wary of the making sure that we don't" (P1)*

(v) *"[...] there'd be no question of removing historical artefacts, or indeed features that are valued by the community, for example, as cultural features" (S12)*

Comparing Scotland's wildlands to wilderness perhaps results in them being undervalued, or mis-valued *(i)*. While they have been significantly modified in the past - and continue to be in the present in some instances - they are valued in their present state precisely for the *semi*-naturalness and wild quality they have retained; they are still considered to be 'wild' *(ii)*. Some even find wildness in 20th century plantations or intensively managed heather moorlands *(iii)*. Most respondents' vision for the future of wildland, therefore, frames Scotland's remnant wildness positively, rather than focussing only on what has been lost alone *(iv)*. Rather than aspiring to a quixotic, fools-errand vision of untouched wilderness, many panellists accept that Scotland's wildlands are a managed asset which exhibits a wild quality. While rewilding seeks to regain 'wilderness', guided by conditions prior to significant human influence, some of Scotland's wildland respondents speak more positively of moving forward *(v)*, using the *current* state of wildland as a baseline as opposed to "some romantic idea of wilderness" *(P1)* (see Chapt.6).

(i) *"[…] comparing Scotland's wild places to some Peruvian rainforest undervalues our semi-natural woodlands" (T2)*

(ii) *"Even though it's a cultural landscape it can still be wild. I feel that a landscape with a strong history of management, such as the Highlands can still be considered 'wild'" (T2)*

(iii) *"[...] a massive Forestry Commission plantation full of lots of exotics [...]. It's pretty wild [...]. I'm pretty happy with those sorts of conditions being wild" (S1)*

(iv) *"We should look at the positive aspects of our landscape now, today […] using what we have already as a starting point for positive management to meet both ecological and social objectives" (T2)*

(v) *"[…]in a hundred years from now you won't be able to tell whether it is natural, semi-natural or whatever" (P7)*

This chapter therefore supports Chapter 5's conclusion that conceptions of 'wild' are central to the restoration of wild places. In accordance with Scotland's pragmatic

wildland framework (Chapt.3), many respondents acknowledge that the Highlands have been co-produced over thousands of years and that it would therefore be inappropriate to be too purist in a wildland vision. Rather than 'wilderness' in any purist, superlative sense, most rewilding initiatives simply seek to enhance wildland quality and wilderness values.

6.6.3. Clashing imperatives: sustainable futures

6.6.3.1. Living, working landscapes: a place for people

As S1 asserted, "[…] most conservation conflicts are not about ecology, they are about people". The coincidence of wildland with working landscapes was therefore significant during discussions. As above, where 'rewilding' is assumed to be about 'wilderness', in a North American sense, the term is considered too ideologically-laden to be sustainable in Scotland's living, working uplands *(i)*. Beyond the natural integrity value of wilderness – which is evident in Scotland's wildland aspirations – wilderness is assumed to be an anti-people concept *(ii)*. The fact that some might, therefore, interpret restoring wilderness values, or rewilding, as excluding people concerned some respondents greatly. While conservationists have long been accused of sterilising Highland development (MacDonald, 1998), 'rewilding' is feared as potentially being the ultimate sterilisation of the land as an ideological view of an unsullied wilderness prevails over the reality of the economic and social significance of upland land-uses *(iii)*. Most significantly, rewilding in a 'wilderness' sense is deeply offensive and pejorative for "land folk" *(CO4)* who, like native Americans and Aboriginees, "have a history in the landscape" *(CO2)* that rewilding could be perceived as trying to erase *(iv)*. The historical legacy of the Highland Clearances is hugely important in this regard; several respondents articulated fears that rewilding could be their 're-enactment' *(v)*.[4]

(i)	*"Using the term 'wildness' still concerns me a little because if you are purist about it I am still not convinced that 'wildness is that sustainable'" (CO4)*
(ii)	*"[…] wilderness means 'without people' (S16)*
(iii)	*"They're alarmed that this would be inhibited by an ideological view that wild land needs to be left alone, that people should be taken off it, left to nature and that species which were once there should be reintroduced and left to roam free" (S16)*
(iv)	*"When you talk about rewilding I immediately think of John Muir and removing the Indians out of the National Parks in America" (P3)*
(v)	*"[…] there's still, very understandably, massive sensitivity about the fact that the Highlands is so depopulated...I mean the Clearances is still a big issue for the Highlands" (S20)*

[4] Interestingly, the significance of the Clearances in engendering sensitivity to 'wild' in Scotland is further exemplified by the fact that at 'Wild Ennerdale', England's foremost rewilding initiative, 'wildness' is considered to be more of a positive descriptor than is seemingly the case in Scotland, with locals arguing that Ennerdale has never lost its wildness *(S7)*.

But, for the most part, the centrality of a "sustainable future, with people at its core" *(CO5)* to many wildland initiatives should allay fears or suspicions of a people-less wildland agenda. Conservation in Scotland is strongly allied with sustainability (Brown *et al.*, 2011), a characteristic which has arguably been worked into Scotland's wildland agenda too *(i)*. Panellists were acutely aware of the potential for accusations of misanthropy given the ecocentric roots of wilderness values *(ii)*, and as such, demonstrated ways in which people are part of their vision for wildland *(iii)*. 'Wild' in this practitioner context is not generally assumed to be synonymous with 'devoid of humans' as respondents demonstrated awareness that the success of any wildland agenda in Scotland will depend upon its mindfulness of economic, cultural and social imperatives *(iv)*. Therefore, while there is a strong concern that landscape conservation with 'wild' at its core is outrightly contrary to local development needs *(S16)* (Wagstaff, 2013.), panellists here demonstrated that there are many shades of grey within this polarity as ideas of 'sustainable wildland management' are considered less contradictory than ideas of 'wilderness management' in the US, for instance (Cole, 2000a).

(i) *"[…] conservation, rather than preservation, because we don't want to freeze this place and make a museum out of it. People have to be part of it" (T2)*

(ii) *"[…] rewilding makes it sound like wilderness, and wilderness makes it sounds as if it is without people" (P7)*

(iii) *"Wild land is no good if people aren't getting access to it [...]. It is wild because of how people feel about it and interact with it […]. We want people to come and experience [names the place]" (CO5)*

(iv) *"Sustainability is a good guiding concept because it encapsulates ecology and economy into one term. It puts natural heritage at the heart of the rural economy" (S16)*

Wildland aspirations in Scotland generally accord with the vision outlined by the John Muir Trust (2010b:22) in which "recreation such as walking, climbing, eco-tourism and deer stalking will take place in high quality wild land and wild places, providing valuable jobs and income for rural and remote communities". Notions of multi-functional landscapes in which the special quality of wildness is an integrated constituent part, rather than 'all or nothing', are important as wildland initiatives make out that completely counterposing wildland and economic activity is not helpful, especially considering the extent to which Scotland's tourism industry relies on wildness (McCombe, 2013). For some of the most pragmatic wildland initiatives, the vision is for multi-functional landscapes in which the special quality of wildness is an integrated constituent part, rather than all or nothing. The idea that wildland has to be relevant to 21st century society is significant to respondents *(i)*.

(i) *"[…] putting the land in some kind of museum I don't accept, but what I do accept is quality, quality of natural resources […] therefore making it more relevant to today than a museum" (S5)*

While this kind of tension between environmental justice and social justice arguments has always been significant in a wilderness context (see Sandler & Pezzullo, 2007), some of the more purist panellists argued that the pendulum has swung too far in the 'people' direction, and that more weighting should be attributed to the natural heritage in this rewilding context *(i)*. The fact that one respondent alluded to the resonance of their wildland vision with the four aims of the Cairngorms National Park, as set out in the National Parks (Scotland) Act (2000) (Box 6.1), sparked debate within the Delphi panel over the remit of Scottish nature conservation authorities as accusations of "incognito planning authorities" emerged *(CO3)*. While Scotland's National Parks are unquestionably distinct in the international sense because they are lived-in, working landscapes, some respondents feel they are too 'people' and 'culture' oriented and that fears over stunting rural economic development had resulted in not enough emphasis on the environment *(ii)*.

(i) *"[…] a rebalancing of priorities in the conservation sector generally is needed. They seem to have completely lost their way and so, whatever you want to call it, this change needs to put the natural heritage back at the top of the agenda" (P4)*

(ii) *"Our NPs aren't run on a holistic or ecological basis [...]. They are about economy, planning and development" (S22)*

Cairngorms National Park Authority Aims

- *To conserve and enhance the natural and cultural heritage of the area*
- *To promote sustainable use of the natural resources of the area*
- *To promote understanding and enjoyment (including enjoyment in the form of recreation) or the special qualities of the area by the public)*
- *To promote sustainable economic and social development of the area's communities*

***Box 6.1**: CNPA (2012) aims which concern not only the management of the natural environment, but aspects relating to rural development also.*

6.6.3.2. Traditional practices in wildlands

Assuming that any approach to enhancing Scotland's wildness would be gauged against purist, international standards of wilderness lead one rewilding critic to assume that all traditional land management practices (e.g. muir-burning, field sports) would be completely incompatible with an upland 'wildness' objective *(i)*. In fact, fears that a 'wildland strategy' would undermine rural upland economies were rife *(ii)*. However, as a number of wildland advocates pointed out, "stalking, grazing, fishing […] they're all of integral importance to the future of wildland" *(S8)*. A number of panellists expressed

their vision as 'enhancing and protecting wildness', but "not to the exclusion of all other land uses" *(T3)*. In accordance with McMorran *et al's* (2006) findings, cultural and traditional land-uses are generally not considered to be incompatible with the conservation, or enhancement, of wild landscapes *(iii)*. For many respondents sporting land-uses or low intensity agriculture, such as crofting, do not necessarily result in a loss of wild character. While for a minority, wildland should be non-extractive *(*e.g. *T1* & *CO7)* and enhancing wildness is "*easier* without the added complication of crofting" *(P4)*, for the most part, cultural and traditional practices are a case for compromise, rather completely irreconcilable. Domestic grazing, for example, or limited, in-keeping infrastructure is considered to have only a very limited impact on wild character, and for some is not a detractor at all. The degree of compatibility between traditional land uses and conserving wildlands is considered to be dictated by *how* traditional land-uses are practised *(iv)*. At present there is conflict over artificially retained deer numbers for stalking and natural regeneration objectives, for instance, but many believe that with a shift in deer management approaches, stalking and wildness could co-exist *(CO6)*.

(i)	*"[...] grouse management is highly intensive and is certainly not a natural cycle. It is completely incompatible with wilderness" (S16)*
(ii)	*"[...] this is where people need to see both sides and recognise that we can have 'wild' in some sense and a thriving rural economy, but I worry that for too many of these projects there's no place for this economy and there needs to be" (S1)*
(iii)	*"[...] grouse moors are wild– it comes down to this perceived issue. I still see grouse moors as wild. Deer forests are wild" (S1)*
(iv)	*"I think most traditional land uses are compatible if they're done in a certain way" (S8)*

In this sense, some respondents described a 'wildland stalking model' in which red deer are reduced to a more sustainable level which generates a pulse of regeneration in the vegetation. With better habitat and reduced numbers, the quality of 'shootable stags' increases *(i)*. A high-end stalking product can then be marketed *(ii)* and clients are educated on the conservation objective and values of the uplands as part of their stalking experience *(iii)*. Some wildland initiatives therefore argue that, if a change in perceptions and attitudes in deer management circles occurred, there is potential for enhanced wild quality to contribute positively to the quality of the stalking experience. Ultimately, therefore pragmatism is deemed necessary; while traditional land-use practices might not be compatible with a non-extraction understanding of 'wild value', these practices, such as muir-burning, do not represent the greatest threat to wildness *(iv)*. Few panellists argued for a cessation of field sports in the uplands, and this highlights the significance of Best Practice guidance in ensuring that wildness and sporting practices are compatible.

(i) *"[…] with fewer numbers and less pressure on the land the land starts to recover and the quality of stag you get is just a completely different league to what you see when the numbers are like they are generally on sporting estates" (CO4)*

(ii) *"[…] by bringing the stags off the hill by pony rather than ATV you're not seeing the damage to the vegetation, or to the landscape itself and that creates a better environment for the client" (P1)*

(iii) *"[…] and part of their experience the stalker will be telling the client what this plant is, what that plant is and why they're doing what they're doing" (S5)*

(iv) *"[…] the most effective way of approaching wildness is not to say 'right you're not allowed to do any muir burn because that's not natural'. I don't think that's really the biggest threat to wildness, I think we need to be concentrating on the bigger things" (S8)*

For other respondents, incorporating traditional practices into wildland is about more than just the rural economy. CO5 explained that managing wildland has to begin with a connectedness to these landscapes. For some respondents traditional practices are not simply compatible with wildland, but are an integral element of wildland *(i)*; they communicate 'identity' by demonstrating human relationships with the land and nature *(ii)*. With the significance of social histories of identity and nationhood to the debate, one respondent presented an almost nationalistic interpretation of rewilding aspirations as a means for overcoming the sensitivities of the Clearances *(iii)*.

(i) *"[…] visitors generally love seeing a stag coming off the hill by pony. They love that history and it contributes to the sense of wildness […]. There is something wild about it" (CO4)*

(ii) *"[…] it's not just about the dispatch of an animal, it's about the connection with the land, it's about identity" (P1)*

(iii) *"[…] in response to these criticisms relating to the Clearances, I think we need to present this as a way of re-establishing the more deeply help cultural identity that Scotland used to know if you go back however many hundreds of years" (S19)*

6.6.3.3. The 'rewilding business model'

Echoing European discussions (Chapt.5), some respondents speak of rewilding as a business model *(i)*, the very opposite of the 'unsustainable future' which others fear it to be. As per Section 6.4, not all rewilding aspirations are philanthropic, as suggested by respondents signposting the tourism potential of wildland and the promise of savings associated with its ecosystem services *(ii)*. While not everyone is convinced by the 'economic viability' arguments for rewilding *(iii)*, many panellists alluded to this 'wildland economy' *(iv)*. Like in Europe, there is a sense that a wildland movement could bring renewed purpose to the declining uplands. For *S19* in particular, involving

economists and business minded individuals, rather than simply naturalists, will be essential to ensuring that the economic case for wildland is made. As simply a spiritual conservation movement, rewilding will continue to be criticised for being "economy-less" *(S1)* and idealistic *(v)*.

(i) *"[…] this has to make sense financially, from a business perspective, otherwise it won't go anywhere, and we need to learn to talk about it in this way, to sell it" (S19)*

(ii) *"Beavers could be worth millions. They slow down water, put more water into the aquifers, slow down agricultural run-off, slow down sediment....." (S17)*

(iii) *"I don't think I've seen the evidence to suggest that their approach [the wildland approach.] is going to deliver more ecosystem services or better ecosystem services, whereas I'm fairly certain that game research can show that we can deliver ecosystem services" (S1)*

(iv) *"[…] the current situation with hill farming and the general state of the upland economy makes now a really good time and I think in light of this wildland is a sellable option" (CO1)*

(v) *"Rewilding just sounds idealistic, it invokes the idea that these are pristine, untouched landscapes and I just don't see how a concept like that could work in Highlands" (CO4)*

6.7. Pragmatism: middle ground and trade-offs

While aspects of America's purist wilderness ideology have emerged in this Chapter, Scotland's wildland initiatives are generally pragmatic about the quality of 'wilderness' attainable *(i)*. For some, this is not to suggest that there are not areas where a purist approach as a gesture of humility and restraint would be appropriate *(ii)*. However, generally, management perspectives and practices driven by purist values are considered difficult to apply in these "altered uplands" *(T3)* in which pragmatism is key. This is particularly apparent in relation to non-native species where, in some instances, their presence is accepted because eradication would be impossible *(iii)* or because there is broader functional conservation value associated with that species *(iv)*. While this pragmatic, middle ground perspective leaves some wildland initiatives facing "a very tricky balancing act" *(S20)* (e.g. conserving natural and cultural heritage with open access while retaining a sporting interest), the need for Scotland's wildland movement to be realistic, and in tune with the reality of upland Scotland - as opposed to "taking a position based on some ideological background" *(S1)* - is significant *(v)*. Purism seems inappropriate, unrealistic and even damaging *(vi)*. As Taylor (1996:13) observes, "[i]f there is no real purity, why be purist?"

(i) *"[…] the vision is to try and create a habitat that is effectively as wild as you can possibly get given that fact that, arguably, there is no such thing as truly wild land in Scotland" (P1)*

(ii) *"Although in many places 'wilderness' is unrealistic, I think there would be widespread support for one or two places in Scotland that really might be like this one day – an aspiration for the future perhaps?" (CO6)*

(iii) *"[…] across much of the estate we've just had to accept that it's going to be there for the long haul, there's not much we can do with it" (P5)*

(iv) *"[…] because it's [the spruce] got such a grip, to remove it all would wipe out things like red squirrels, goshawks, deer, badgers, other wildlife and other species which benefit from the shelter of that woodland even though it's non-native" (S7)*

(v) *"...extremism at either end doesn't produce a realistic direction to go in" (S16)*

(vi) *"Personally, I think the purest form of rewilding is probably unachievable, and it might even be counterproductive" (S12)*

As Adams (1996b) argues, it is apparent that creative conservation cannot be solely about nature; it also involves communities, economies and human relationships with nature resulting in the significance of issues concerning rural development, integrated land-use and sustainable forestry to these wildland discussions. However, the pragmatism and middle ground sought by some wildland initiatives did result in other panellists describing them as "wanting everything everywhere; they want their sport, their rewilding […]" *(CO1)*. Therefore, while the expediency of many rewilding visions allays fears of upland management based on purist ideology, this middle-ground perspective is criticised as not being ambitious enough and accepting too much compromise where nature/the environment is concerned *(i) (S17)*. Scotland's Land Use Strategy (Scottish Government, 2011) is equally criticised for "trying to be everything to everyone" *(S13)* and providing no strategic spatial overview for managing different land-use objectives, such as wildland and sporting interests or sustainable forestry, to ensure minimal conflict *(ii)*. While Scotland's recent Land Use Strategy was initially viewed as an opportunity to further wildland conservation, it is argued that this opportunity has not been taken.[5]

(i) *"[…] basically I think it's a case of saying we should have everything, as long as it takes into account the environment" (S13)*

(ii) *"[...] unless you have a spatial strategy I don't really see the point...it's saying it wants everything everywhere. Well that's not really a strategy" (S13)*

[5] This scoping round and Delphi round 1 occurred very shortly after this critical Land Use Strategy was published, hence its pertinence in discussions.

6.8. Scotland and the international stage

In accordance with international approaches to managing wild places, Scotland's wildlands are conceived through multiple axioms and dimensions. Like European wilderness restoration ideas, Scotland's movement is less guided by pre-human settlement conditions than Chapter 4's new world countries *(i)*. Interestingly, this accords with an intriguing comment from an American respondent who suggested that, because of its deeper history, wilderness restoration in the UK might be more a case of "restoring some kind of conditions that you value as a culture […] perhaps a cultural artefact of 300 years ago or something [but one] that people perceive as wilder" *(US8) (ii)*. This is a significant point of discussion in Chapter 10.

(i)	*"What stage back in time do we want to return to, if any? […] How would you even define when the land stopped being wild or natural or when humans had had too much influence? […] We don't want to restore the past" (P1)*
(ii)	*"[…] I am not quite sure if you [in Scotland] are returning them [wild lands] to some kind of historic ecosystem […] but I wonder if in some cases that is more of a cultural landscape, like historic might be a landscape that was a cultural artefact already and that was valued culturally" (US8)*

With the history of Scotland's wildland concept firmly rooted in recreation and landscape, experiential wildness is critical to Scotland's movement. As such, as in New Zealand, "being wild is not [necessarily] the same as being free from human influence" for some respondents (SNH, 2012:2). In fact, the idea that wildlands can be left unmanaged in an 'untrammelled' American sense is anathema to many respondents who are using significantly interventionist practices to physically restore the land instead.

6.9. Summary

Scotland's wildland movement is multi-faceted, founded upon broad ideas of 'wilderness values' with ecological, cultural, historical, philosophical and economic dimensions. As different wildland initiatives place varying degrees of emphasis on a range of wildland parameters, different landowners are embarking upon different pathways towards enhancing wildness (e.g. recreational vs. ecology). However, while "there are many different models and versions of it, there's a sort of broad philosophy" *(S12)*, one which accords neatly with JMT's 'Wildland Management Standards' (Table 6.8). This 'best practice guide' not only reflects the fact that 'rewilding', in a broad landscape and ecological sense, is gaining momentum, but also encapsulates the nature of this holistic movement from the practitioner perspective described here.

Ethos area	*Approach*	*Example actions*
Management Planning	• Audit existing state • Survey and monitor • Develop SMART actions • Consult stakeholders	✓ Map all man-made structures ✓ Digitise woodland ✓ Conduct archaeological survey ✓ Habitat & species monitoring programmes ✓ Monitor deer & livestock exclosure plots ✓ Monitor people counters & car park usage ✓ Consult on plan with stakeholders
Soil, carbon and water	• Maximise water tables on peatland • Minimise exposure, burning and grazing • Minimise pollution	✓ Block drains to raise water table ✓ Minimise burning ✓ Remove litter
Biodiversity & woodland	• Maintain in favourable condition • Maximise native habitats • Biodiversity species management • Re-structure woodlands • Re-introduction	✓ Implement SNH advice ✓ Advance SRDP applications to deliver management ✓ Map and remove non-native invasives ✓ Additional native woodland planting projects
Deer & livestock	• Minimise deer impacts • Leave deer carcasses for eagles • Minimise livestock impacts	✓ Deliver cull targets ✓ Engage with local Deer Management Group/Section 7 group to deliver cull targets ✓ Liaise with neighbouring landowners
Facilities and Heritage	• Staff training in wildland values • Maintain cultural heritage sites in accordance with statutory guidance • 'Reduce, reuse and recycle' • Minimise carbon footprint • Explore local renewable energy (e.g. woodchip boilers, solar panels) • Remove redundant structures (e.g. fences) • Employ sensitive building techniques where a new building is required • Use sensitive footpath techniques	✓ Monitor and maintain the condition of paths ✓ Run conservation work parties ✓ Minimise resource waste ✓ Maximise energy efficiency
Communities, visitors & awareness	• Provide responsible access • Meet responsibilities to wards local people • Joint project work • Maximise interpretation • Maximise education opportunities	✓ Provide guidance on fishing policy ✓ Advise on responsible campfires and clean up ✓ Attend relevant local meetings ✓ Use local contractors where possible ✓ Consider providing interpretation in Gaelic

***Table 6.8**: The John Muir Trust's Wild Land Management Standards, focused on protecting wild places, restoring natural habitats and connecting people with nature (JMT, 2012).*

‘Rewilding’ is a contentious means of describing this evolving ethos because of fears that it means maintaining empty landscapes, pushing people off the land and prioritising the ‘natural’ over the ‘cultural’. Because it is most commonly associated with abandonment and allowing vast tracts of land to operate solely under natural processes it is considered to be an uncompromising term with little resonance in Scotland’s complex, pervasively altered uplands. While rewilding is criticised as being purist, thereby intuitively based upon a *terra nullius* idea of wilderness (Chapter 2), Scotland’s discussion appear more positive, focussing on the reality of habitat and landscape quality. Although historically, Scotland’s wildlands have not been described in biophysical terms, a ‘natural areas’ view of wildland quality (alongside its historical landscape framing) is increasingly cogent. Beyond the ‘wildland critics’ therefore (who are arguably criticising a *terra nullius*, wasteland conception of wilderness), a number of wildland initiatives present a more measured, specifically Scottish wildland vision. This Chapter therefore supports Chapter 4’s suggestion that understanding the idiosyncrasies of wilderness concepts and contexts is imperative to understanding restoration discourses. The cultural history of the Highlands and the nature of contemporary land use conflict have arguably been critical in tempering purist visions for future wilderness.

Chapter 7

The '(re)wilding' paradoxes: conceptual fault-lines

7.1. Chapter aims

While reflecting on the philosophical values which guide conservation might not bring about 'on the ground' change, the fact remains that this intellectual terrain has considerable implications for practical management approaches (Angermeier, 2000). The need to ensure that conservation discourses are wholly defensible is, therefore, implicit (Warren, 2009a). While Chapter 6 explored a number of practical tensions and differences which impede the development of a cohesive wildland strategy for Scotland's uplands, this chapter explores the conceptual architecture and congruity of this wildland movement. Founded upon nature conservation's most traversed ideologies, 'rewilding' in Scotland connects with some fundamental, recurrent debates in environmental philosophy. Conservation strategies based on 'wildness' therefore incorporate a number of inherent environmental paradoxes, which to date remain largely unquestioned in Scotland's wildland context. A holistic, critical appraisal of the values and ethics associated with managing Scotland's wild landscapes is therefore necessary and timely.

Therefore, the aims of this chapter are to:

- *consider the conceptual anchors of rewilding discourses*
- *explore the conceptual paradoxes associated with the rewilding concept*
- *understand how different rewilding discourses relate to different understandings of 'wild' and 'natural'*

7.1.2. Data-set review

As with Chapter 6, the data-set for this chapter comprises the 20 structured interviews from Phase 3 of the overarching methodology, and the results from the first Delphi round (for respondent codes see Section 6.1.1, Chapter 6).

7.2. The nature of the conceptual conflict

At first glance, ideas of restoring wildness appear unquestionably commendable (see Taylor, 2011). However, scratch the surface of this emergent environmental ethic and its profoundly complex, and at times paradoxical, nature is immediately apparent. While some of the conceptual dilemmas associated with 'managing wilderness' were explored in the international context (Chapt.5), these ambiguities become more problematic in

the palimpsest landscapes of upland Scotland where human history is woven into landscapes cherished for their wild quality. The wilderness ideal separates the "pristine from the altered" (Warren, 2007:431); it applies to undisturbed, uninhabited landscapes (Warren, 2004). Evidence of human influence is a universal 'wilderness detractor', and yet Chapter 6 identifies a number of interventionist management practices utilised for restoring 'wild' quality, and even for preserving some distinctly cultural features. The following discussion presents philosophical perspectives on wildland aspirations in Scotland, and is structured in accordance with the conceptual framework outlined in Table 6.1.

	Areas of Tension	*Conceptual Discords*
(i)	***Environmental Desirability of Rewilding in Scotland***	• *Does management retain wildness in Scotland?* • *Could 'rewilding' diminish 'popular wildness' in Scotland?*
(ii)	***'Wildness' in a Cultural Landscape***	• *Can cultural heritage be reconciled with wildness?* • *Can cultural heritage manifest wildness?*
(iii)	***Normative Foundations,***	• *Can 'self-willed' landscapes be delivered through deterministic management targets and measures?*
(iv)	***Rewilding Parameters***	• *Are naturalness and wildness congruent and compatible values?*
(v)	***The Interventionist Paradox***	• *Can naturalness and wildness ever be enhanced or improved upon by human action?* • *Is 'restored nature' 'compromised nature'?* • *Can wildness be designed?*

Table 7.1*: Conceptual framework for considering the conceptual congruity of 'managing for wildness'.*

7.3. Environmental desirability of rewilding

In Chapter 6 the perceived state of ecological degradation of Scotland's wild places emerged as a central motivation for the current restoration emphasis. 'Minimal intervention' and 'restoring natural processes' were presented as significant management principles. Meanwhile, respondents also raised concerns that a purist, received understanding of wilderness (necessitating complete non-intervention) would raise questions about the appropriateness of rewilding to Scotland's uplands, including questions over its environmental desirability. If the '(re)wilding' process does not

deliver what is considered by land managers to be a 'wild landscape', or a 'wild ecology' then its environmental desirability is ambiguous.

Concern for the environmental desirability of 'rewilding' strategies	
Conservation and Wildness	• *The compatibility of 'wildness' with the proactive, species-specific emphasis which informs nature conservation,* • *The likelihood of non-intervention resulting in the loss of charismatic species of conservation significance is high,*
Minimal intervention in managed landscapes	• *Why be concerned with minimal intervention in landscapes which have been subject to such extensive management in the past?*
'Scottish-ness' and wildness	• *The dominant vision of wildness presented in Chapter 6 (i.e. increased woodland cover) could undermine what is already valued as a natural, and wild, landscape in Scotland*

Table 7.2*: Reasons for questioning the environmental desirability of 'wildness', where it means self-willed autonomy, as a land management objective.*

The importance of exposed moorland to Scotland's identity as a 'wild destination' leads opponents of current wildland initiatives to voice concerns that the thrust towards increasing woodland cover might degrade the experiential quality of wildness *(i)*. Scottish heather moorland is commonly mistaken to be the natural condition of the Highlands (Mackay, 1995; Dodgshon & Olsson, 2006; Warren, 2009a). With its savage, wild appeal, it is often cherished as Britain's 'last wilderness' (Habron, 1998a), and with the Scottish psyche so heavily invested in 'the wild' it has become a symbol of 'quintessential Scotland'. In fact, four respondents made reference to a recent poll aimed at understanding what society thinks characterises a Highland landscape, in which a 'stag on a barren hill' was considered paramount, an iconic image upon which much of Scotland's tourism economy is founded. People enjoy open views; "and people love that openness" *(S20) (ii)*. Intelligibly man-made or not, the barren, vegetation-poor heather moorland is wild *(iii)* (Fig.7.1). Therefore, while wild quality in this movement is increasingly defined in a biophysical, resilient ecosystems sense, in contemporary societal discourses Scotland's denuded ecology results in vast, open vistas, uninterrupted views, and a sense of uninhabited wilderness *(iv)*. The potential for the misconceived naturalness of heather moorlands to be affronted by a strongly biophysical vision for restored wildlands was a significant discussion theme. Just as wind-farms are opposed on aesthetic and 'artificial' grounds, planting trees might also be viewed as 'unnatural' in these 'unadulterated' landscapes, a defacement of wildness and scenery *(v)*. The historical legacy of insensitive geometric plantations does not help the cause; "putting trees there [in the past] would have meant a five hundred hectare

plot of Sitka spruce" (*S17*). Managing public perceptions of wildness against conservationists' and land managers' more educated understanding of the 'natural' and 'wild' condition of the Highlands is therefore a central challenge to the development of a cohesive wild land strategy for Scotland. Nowhere is this more explicit than in the public reaction to T1's removal of feral goats; aspiring to restore ecosystem health, T1 opted to control these unnatural grazers which "confused a lot of people [...] [who] were saying we thought you were into keeping wild land and this is the most iconic in the Southern uplands" (T1).

(i) *"The open hill is one of the things that makes it feel really wild for them so to have trees growing over it actually might feel like it's taming it in some way" (S20)*

(ii) *"If you study where all tourist lay-bys are they are all on the top of a hill with a magnificent view" (P3)*

(iii) *"[...] those types of landscapes [heather moorland] have that sense of desolation that I think a lot of people think of as 'wild'" (P6)*

(iv) *"Wildland doesn't necessarily mean forested. In Scotland it is more often very open landscapes, open vistas, not a forested place" (CO5)*

(v) *"I meet people who say what are they doing to Scotland – where's the scenery going?" (P3)*

Figure 7.1*: Experiential sense of wildness associated with the bleak openness of this managed landscape near Rannoch Moor. Photo © Holly Deary.*

Chapter 6 alluded to the fact that, given its part-cultural origins, if Highland landscapes exhibit a wild quality then the historical, and contemporary, role of management in manifesting such wildness should be recognised *(i).* In accordance with Wigan (1991) and SNH (2002b), past and present nature conservation and traditional management practices are understood to have a role in retaining Scotland's upland biodiversity and sense of wildness. Adopting a hands-off approach in these managed landscapes is viewed as non-sensical by a minority of respondents *(e.g.* P2 & P5*)* who suggested that

practices such as muir-burn retain a young seral stage which provides the sense of desolate exposure and primitive wildness, and by more respondents who signposted a number of specific iconic conservation species whose future depended upon on-going management intervention. Minimal intervention is not necessarily 'good' for nature conservation, 'natural conditions are not always favoured by native species *(ii)* and management does not always cause degradation *(iii)*. This lack of integration between a wild land agenda and a nature conservation agenda is discussed in Chapter 9.

(i) *"[…] actually, man is creating this [these landscapes which are considered wild]" (T3)*

(ii) *"Spruce thickets [which are non-native] are favoured by capercaillie, particularly in winter" (CO3)*

(iii) *"[…] we put the cattle on the hill in the summer time to actually help biodiversity and they've actually improved the vegetation hugely in the glen"(T3)*

7.4. Wildness in cultural landscapes

In the midst of all this discussion of wilderness values "it is sobering that beneath the ancient pinewoods […] lie the traces of Neolithic cultivation" (Smout, 1997:6). By virtue of the fact that 'wild' derives meaning from the juxtaposition of 'nature' and 'culture' (Cronon, 1996), the place of this history and heritage in wildland initiatives is a complex theme. In the name of 'restoring wildness', removing 'unworthy' cultural artefacts transpired as a central wildland management practice in Chapter 5, and was apparent in some Scottish instances in Chapter 6. However, during this conceptual discussion, eight estates in particular expressed concern over denying Scotland's long history of pervasive human influence *(i)*. Disregarding - perhaps even concealing - the fact these that these landscapes of wild character are cultural landscapes, is a fallacy. It is fraudulent, deceptive and philosophically unjustifiable *(ii)*. Beyond these abstract arguments, implementing a management strategy based on devaluing cultural landscape components is impracticable. Repressing cultural heritage, and enhancing the natural, necessitates a sound understanding of what is 'human induced' and what is 'natural', which as Chapter 3 evidenced is problematic. While a building or lazy beds might be easily discernible as 'unnatural', the cultural nature of other artefacts is far less explicit *(iii)*. For instance, the majority of the acclaimed, natural ancient woodland of Strathspey has, in fact, been subject to quite extensive timber extraction at some point in the past. While this history might be imperceptible in places, it is enduring and completely entwined with our natural heritage *(iv)*. Management prescriptions based upon valuing the 'natural' and undervaluing the 'cultural' radically oversimplify the complexity of these hybrid landscapes *(v)*. Above anything else, a purist anti-culture stance is recognised by some wildland initiatives as leaving rewilding open to the criticism of

attempting to create an illusion of an original, pristine state similarly to the controversial removal of Indians from tribal reserves to create American National Parks (Spence, 1999). For many respondents, Scotland's wildland initiatives need to move beyond the current model which prioritises natural landscapes over cultural landscapes. The composite upland landscapes have distinct value in their own right; with their unique species assemblages and landscape aesthetics, they are uniquely Scottish *(vi)*. Some respondents therefore called for greater recognition of the value of semi-natural landscapes as opposed to viewing them as 'inadequate landscapes'. "[R]emoving the evidence does not change the past" (Feldman, 2011a:192). Ontologically this human history cannot be erased. As such, a conceptually robust restoration cannot be based upon the deceptive portrayal of an untouched land; to do so is essentially rooted in the received wilderness idea which has been criticised so extensively (Chapt.2).

(i) *"[…] we certainly wouldn't be looking to remove these monuments to the past to try and pretend that, because it's wildland now, that past doesn't exist" (CO4)*

(ii) *"All landscapes in Britain now are cultural landscapes [...] and so would be the rewilded ones because they are the result of their history" (S1)*

(iii) *"[…] the degree to which historic overgrazing in the uplands was natural or human induced isn't really known. […] We don't really know what a naturally grazed system would like" (P3)*

(iv) *"[…] things like these lazy beds are a constant reminder that these landscapes aren't as wild as they first feel" (T2)*

(v) *"[…] this place certainly has wild qualities, but to call it a wilderness is not doing its cultural history justice. These are complex landscapes […] the full complexity we can't even begin to decipher" (T3)*

(vi) *"[...] to have big areas of heather moors as a cultural landscape is something very Scottish" (S17)*

Arguably more importantly, erasing evidence of people demonstrates a lack of recognition of the contribution that cultural heritage can make to the very wildness that respondents seek to restore. While wildness and naturalness represent the cornerstones of conservation, notions of authenticity and landscape integrity emerged as significant in this wildland context. Discussions about where historical accuracy and honesty interface with wildness therefore provided some interesting perspectives on the potential for cultural components to enhance this sense of wildness. For several respondents, Scotland's wild places are 'storied landscapes', and these histories are central to contemporary cultural connections with these places as 'wild' *(i)*. Recognising wildland as the product of natural and cultural co-evolution over vast timescales enables these respondents to discern 'wild' value in an old derelict bothy, sheep fold or historic way-markers *(ii)*. Their longevity and historical continuity affords them a naturalised quality *(iii)*. The history of abandonment, clearance and forced migration associated with a deserted croft emphasises the sense of Highland wildness through its portrayal of a landscape too savage and too wild to support human existence for some respondents.

Given their centrality to Scottish identity, such artefacts can, according to some wildland initiatives, be celebrated *(iv)*, a point which accords with SNH's decision to focus on 'modern human artefacts' only in their recent Wild Land Areas map (SNH, 2013; 2014) and is supported by a recent wildlands perception study in which deserted bothies and crofts were attributed a positive wildness score (Wilson-Smith *et al.*, 2012).[1] From this storied perspective, reconciling a wild quality with cultural heritage and human history is less conceptually challenging.

(i) *"[...] the way we see it is that [estate name]'s history has a lot to thank sport for [...] to forget that would be a bit of a shame. I think we have a sort of duty to continue that" (P1)*

(ii) *"[...]they've got small stone areas where I think they used to drag deer to [...] so there's a lot of that and I don't think we would want that removed" (CO5)*

(iii) *"[...] a lot of these old archaeological remains are almost naturalised themselves. They're covered in lichens and mosses and I think they do add something to the effects, so you could have a cultural aspect to the wild land" (CO5)*

(iv) *"I have no idea what a 'rewilding policy' will do, but I'm pretty sure it's not going to say tidy up the old dykes. It is probably going to say keep the old dykes" (P3)*

Despite these pro-cultural heritage perspectives, there are a number of practical challenges to its incorporation into wildland discourses because "one person's cultural heritage is another person's vandalism" *(CO7)*. While history is significant to wildland, cultural heritage is not always historical. There was widespread agreement that contemporary exemplars of human presence are harder to accommodate in wildland *(i)*. However, assigning historical status is subjective, inherently value-laden *(ii)*, and untenable when one considers that the wildland managers of the future may view the 'unworthy' artefacts of today as historical heritage *(iii)*. Beyond its mere presence, the condition of the artefact is evidently important too. For some respondents, purposefully retaining such buildings in a state of disrepair to represent the legacy of a deserted, desolate glen in which people were evicted and crofts pillaged is entirely consistent with wildness *(iv)*. However, for others this is an anathema *(v)*. Reconciling cultural resources with 'visions of wildness' is therefore governed by a suite of conditioning factors, including location, state of repair and public affection *(vi)*. While not all cultural articles are detractors in wildland, it is evident that not all cultural artefacts are compatible with enhancing wildland quality. Managing cultural artefacts in wildland is therefore very complicated. Broad brush rules are tricky to apply; context is everything. Consequently, where respondent estates have failed to understand the public affection

[1] The age of the structure alone doesn't give a positive wildness score. The integrity of the site has to be uncompromised too (i.e. the historic integrity of a bothy would be compromised if there was a wind turbine next to it).

and cultural significance of a particular feature wildland management tensions have emerged, as was the case for *T1's* goats (Fig. 7.2), which "[…] were part of the human heritage of the uplands".

(i) *"[…] what you want to get rid of is modern infrastructure" (CO5)*
(ii) *"We're a bit snobby about cultural artefacts really. […] What we're talking about is modern, contemporary artefacts. […] Wind-farms are a huge detractor" (S13)*
(iii) *"In 200 years-time everyone will be really excited about wind turbines and that will be the archaeology" (CO1)*
(iv) *" [ruins can] can actually contribute to that sense of wildness because it evokes this past cultural link which isn't there anymore" (CO2)*
(v) *"[instances of where an] abandoned croft [is maintained in a derelict condition to] maintain the wistfulness of old ruin […] goes so against the culture of this area" (P3)*
(vi) *"[...] it's a bit like planting trees around Stonehenge, if it was that kind of extreme example then there would be no question" (S12)*

***Figure 7.2**: Wild goats, which have been at the centre of an ongoing debate for one wildland initiative in particular. Photo © Neil McIntyre.*

While Scotland's wildland initiatives may be more pre-disposed to embracing the cultural legacy of the Highlands, the fact that 'wild' only exists in juxtaposition with 'civilisation' remains, meaning that notions of 'enhancing wildness' still involve 'decreasing cultural-ness' in some sense. However, throughout Chapter 6 and the

remainder of this chapter, it is increasingly apparent that many initiatives in Scotland think in continuums, rather than binaries *(i)*. Where aspects of cultural heritage are valued in a wildland context, this is because 'wild' is considered as a continuum, not an absolute *(ii)*. As such, rewilding aspirations are manifested in degrees, rather than an 'all or nothing' ambition to regain pure wilderness *(iii)*.

(i) *"It's not as simple as all that, you really can't think about it in black or white terms […] Nothing in upland environments is black or white" (S5)*

(ii) *"...if you talk about wild land you're talking about a place and you're talking about something which is wild on one side of the line and not wild the other side" (S12)*

(iii) *"It's degrees of wildness. It is not taking it all back to a primeval state" (S12)*

7.5. Normative foundations

Despite the challenges inherent in applying prescriptive management frameworks to complex, ambiguous landscapes (Warren, 2007; 2011), and that the autonomy of natural processes is considered a key wildland driver (Chapt.6), most panellists described deterministic practices and normative expectations of some amplitude. This section examines the robustness of manifesting 'wildness' as a specific, pre-defined ecological or landscape condition.

7.5.1. Deterministic management and prescriptiveness

The varying levels of intervention in Chapter 6 are associated with varying levels of determinism in management. Where respondents believe the most critical characteristic of wildland to be self-determination and self-sustaining processes they are most likely to remove any perturbations to natural processes and accept whatever results occur *(i)*. But, some respondents' visions are associated with greater degrees of determinism, resulting in disappointment when a particular outcome does not occur *(ii)*. The degree of prescriptive management considered reconcilable with 'wildness' therefore varies from respondent to respondent.

(i) *"Whatever results we will accept as a 'result'. If it doesn't regenerate to woodland […] then that's fine" (P1)*

(ii) *"[…] if the regeneration isn't as good in that area then we will have to consider other approaches to bring it on" (CO3)*

Where rewilding is considered to be the restoration of pre-human conditions, the baselines adopted represent a significantly deterministic guide *(i)*. Despite the fact that 'nature in charge' was considered critical to a 'rewilding ethos', this was less apparent

during discussions of day to day management practices on some estates *(ii)*. For some wildland initiatives, Geographical Information Systems, vegetation and soil classifications and 'rules of thumb' concerning the number of stems per square hectare are critical to the delivery of their wildland vision.[2] One respondent provided an anecdote involving a Millennium Forest Woodland grant and the search for a suitable site which became an exercise of geometry *(iii)*. Conflict between theory and praxis (resulting in *ad hoc* management scenarios) was not uncommon amongst panellists. In fact, it was positively routine as respondents tried to navigate emergent concepts and practices *(iv)* (see Section 7.6.6).

(i) *"In 200 years we want the forest to have reached that treeline. […] We know that's where it once was naturally in the past" (CO3)*

(ii) *"[…] where there aren't any trees and we want trees, and we've decided that that is appropriate, then we're very interventionist" (CO7)*

(iii) *"[partner organisations] were saying things like, 'well this area of wet heath isn't a Natura habitat so we could put the trees there, but this area of dry heath is a Natura habitat so we can't put them there […] but that's the danger of applying your rewilding and your ecology from a textbook situation, rather than from unplanned natural ecosystems"(S9)*

(iv) *"We've spent the last however many years reducing grazing, but there's now some folks are saying that we're suffering from under-grazing in moorland areas, so we're likely to have to do something about that" (CO2)*

A range of relatively intensive, governing practices can be associated with Scotland's wildland movement *(i)* (Table 6.4, Chapt.6) While in Chapter 6, prescriptive policy frameworks with 'indicator species' and notions of 'favourable condition' were criticised as antiquated, in practice, some respondents still evaluate their 'success' through these frames of reference *(ii)*. '*Should*' and '*ought to*' were commonly employed expressions when detailing and justifying the specifics of their aspirations and visions for the future *(iii)*.

(i) *"[…] last week and the week before we had a harvester in who high-topped a thousand trees" (CO3)*

(ii) *"If we can maintain these areas to be in favourable condition then brilliant" (P1)*

(iii) *"[…] a Cally pinewood should be a mixture of broadleaf and pinewood"(P7)*

CO3, in particular, neatly illustrates this discrepancy between endorsing natural processes while maintaining pre-determined endpoints. This estate's management plan details a holistic, landscape scale vision and a commitment to allowing 'nature to take

[2] However, it is important to note that the SRDP funding stream is influential over stems per hectare aspirations as under their regulations anything less than 16,000 stems per hectare is considered a breach of contract.

its course'. However, under the ownership of an NGO with a tightly-focussed remit, this estate's management objectives are arguably focussed on maintaining species-specific habitat conditions, a management vision which requires intensive cutting, burning and conservation grazing *(i)*. Rather than allowing nature to develop under its own autonomy, CO3 might arguably be accused of "gardening for particular species" *(S13)*. While their commitment to minimal intervention is evident in theory (i.e. their vision), in practice, when this approach does not deliver the desired conservation benefits (i.e. the 'oughts' and 'shoulds'), the response is to intervene to ensure it does *(ii)*. A 'hands off' approach is in tension with the diverse, species rich composition that many panellists aspire to, a point which the significance of proactive tree-planting is testimony to *(iii)*. Because minimal intervention is unlikely to result in the desired woodland regeneration, many estates have resorted to the planting described in Chapter 6. In accordance with human values and preferences these more interventionist initiatives are ensuring that a future wildland which accords with their expectations is created *(iv)*. For one respondent in particular these deterministic measures have resulted in rewilding becoming synonymous with "putting trees into the landscape, nothing else" (S9). As a symbol of the authentic 'natural' of the Highlands, the Caledonian pinewood is celebrated through this wildland movement. In relation to this vision, "some species are too iconic to Scotland's native pinewoods not to fight for" (C05).

(i)	*"[…] if we cut, burn or graze the field layer within which heather is dominant and blaeberry is suppressed then the blaeberry will benefit and the heather will be knocked back. […] Blaeberry is a very important plant for capercaillie so we've got contractors out doing this with brushcutters" (CO3)*
(ii)	*"The idea was, control deer and that will do the job, but in time we've realised that with the rate of expansion we need to be doing more" (CO3)*
(iii)	*"[planting trees] would be contrary to trying to get this wild landscape, wild habitat. Although you may be with native source seed etc. it is still a fairly artificial habitat you're creating until that's established" (P1)*
(iv)	*"[…] at the moment we're just making those decisions [e.g. like what species where]. We're saying we want less of this and more of that" (CO7)*

In contrast, some (e.g. *P1;CO2;CO4*) estates demonstrated more congruity between vision and practice, professing commitment to the ecosystem approach. In accordance with Chapter 5, true wildness is understood to be "trying not to steer too much how that land will actually regenerate" *(P1)*, allowing wild nature to take its own course and accepting the consequences *(i)*. The more purist-wildness respondents recognised the paradox in adopting a natural processes vision but employing deterministic practices *(ii)*. While CO3 spoke of "headline species", such a species-specific emphasis goes against a wildland ethos as they reasserted the need to 'scale up' in conservation to the landscape scale *(iii)*. Theoretically, holism in managing the environment was central to all panellists', but in practice, unshackling conservation from its prescriptive "stamp-collecting" (S9) past is challenging *(iv)* (Fig.7.3).

(i) *"[…] let the chips fall; you know, that there would be some losses as well as some gains […] we are completely resistant against managing for particular species" (T1)*

(ii) *"[….] it is always 'it should be this', 'it should be that', but to me, that is the antithesis of rewilding" (S9)*

(iii) *"...you've got to start accepting that there will be changes that may not be beneficial to a particular species at that time, and then it changes again and somewhere else is changing so there is this mosaic movement" (CO7)*

(iv) *"…some are cautious just because they're traditionalist conservationists for whom rewilding can actually lead to diminution in biodiversity" (S8)*

***Figure 7.3**: Scotland is a UK stronghold for red squirrel meaning that, despite the shift towards holism and natural processes in conservation, targeted habitat management for this species is ongoing. Photo © Neil McIntyre.*

7.5.2. <u>The nature of nature</u>

Inextricably linked to the discussion of normative prescriptions is a debate concerning the 'nature of the nature' that wildland initiatives aspire to. While Chapter 6 detailed the importance of disequilibrium ecology as a catalyst for Scotland's wildland movement *(i)*, prescriptive interventions founded upon 'favourable conditions', 'climax communities' and temporally and geographically delineated spaces imply that some wildland aspirations remain rooted in ideas of equilibrium in nature *(ii)*. This concerned some respondents, who asserted that it is notions of an elusive 'climax ecosystem' which drives dogmatic management measures, such as planting and ground cultivation. While getting out in front through creative conservation strategies represents the greatest weapon to combat unremitting environmental change *(iii)*, shifting away from the normative prescriptions of "doing biodiversity" in favour of the indefinable endpoints of "genuine wilding" was described by *CO3* as the most important challenge facing the current wildland movement.

(i) *"sometimes we might be struggling to maintain and manage in little boxes something that if you were going with 'natural' or 'wild' would be much more unpredictable and dynamic" (S15)*

(ii) *"[…] that area of the moorland habitat isn't in favourable condition at the moment […] It's being kept in an early seral stage because its stunted by browsing" (CO4)*

(iii) *"[…] we can't change climate change, but if we can remove the obstacles to natural processes then we can help the environment adapt" (S7)*

But, those panellists with less pre-determined expectations about the outcome of rewilding results (Section 7.5.1), recognised the futility of managing against change *(i)*. Current discourses detailing "precisely how many trees should go where" *(S9)* are arguably more concerned with recreating 'wildness' as the historic character of the landscape prior to human intervention, as opposed to 'wildness' as a self-regulatory process (see Section 7.6.5). The majority of respondents expressed opposition to such a sentiment; curating a museum of past land conditions is viewed as neither desirable nor defensible *(ii)* (Section 7.6.1). The significance of the 'future' to Chapter 6's discussion indicates that many of Scotland's wildland initiatives are not concerned with "making land some kind of museum" (S5). The idea that rewilding is in search of some putative prior is thus central to respondents' dislike of the term; "rewilding to me implies that the land was completely wild before, but at what stage? It's impossible to look back in the post-glacial epoch and identify some point you want to back to" (S3). Nature is dynamic, "its trajectory through time is open ended and not tending to an equilibrial point" (Adams, 1997:286).

(i) *"Change is inevitable. You can manage change but if you try to stop it you just create more road blocks" (S16)*

(ii) *"If you start wanting it just to be a particular snapshot in time then that's preservation rather than conservation" (P1)*

7.6. Rewilding parameters

7.6.1. The 're' prefix: retrospectivity

Broadly motivated by 'righting past wrongs', Scotland's wildland movement is a restoration agenda (be it ecological, landscape or cultural) (Chapt.6). This generates recurrent debates over establishing defensible – and operational – baselines *(i)* (see Warren, 2007). While 'recreating' natural woodland is a shared objective for most rewilding initiatives, there is significant divergence over what baseline to adopt; a wildwood of 6,000 years ago *(ii)*, a pre-settlement landscape of 1,000 years ago *(iii)* or a future condition *(iv)*?

(i) *"What stage in history are you looking to achieve? How do you decide" (T3)*
(ii) *"[…] we pegged that onto 6,000 years ago [when] Mesolithic cultures were not beneficial but not impinging in a major way on the landscape" (T1)*
(iii) *"To me this will be like Scotland was 1,000 years ago" (CO4)*
(iv) *"It is a future natural state, rather than a past natural state […] past conditions inform a future natural" (P7)*

T1 is the only project with explicit aspirations to recreate an ancient landscape *(i)*. In general, the notion of replicating a particular historical state is contentious because of the philosophical, and practical, challenge of choosing a defensible baseline *(ii)*. To avoid assigning a 'target year' to their restoration, some estates rely on, loosely defined, pre-settlement conditions as a historical guide *(iii)*. However, it is widely recognised that the onset of human modification in Scotland's hybrid landscapes, with its co-evolved natural and cultural heritage, is an arbitrary target and imprecise target *(iv)*. It cannot be constrained to a specific moment in time because "…one cannot, of course, establish the birth date of a human society" (Crosby, 1986:44). This is significant because interpreting 'human induced loss' – a critical motivation for action on many rewilding estates – relies on distinguishing the wild and natural from the un-wild and unnatural *(v)*. Furthermore, some respondents noted that employing historic baselines undermines their axiomatic visions for self-willed autonomous nature *(vi)*. In accordance with Hobbs *et al.* (2010a), *S7* believes 'stewardship' is a more appropriate term than restoration as it avoids connotations of restoring past conditions.

(i) *"[…] we admitted from the beginning that you can't simply turn the clock back, but that we were going to do the best that we could" (T1)*
(ii) *"You can't drill down to actual naturalness because which bit? 'Well, I want the naturalness from four and a half thousand years ago please rather than the naturalness from ten thousand years ago...'" (S1)*
(iii) *"[…] it's a bit woolly really, but what we're talking about is conditions before humans started having such a detrimental effect" (CO7)*
(iv) *"How far back is wild? Is that the Neolithic? The Mesolithic?" (P1)*
(v) *"[…] species reintroductions should be based upon detailed research on a species with proven anthropogenic loss" (S9)*
(vi) *"[...] there's no specific vision so there's no benchmark [...] let's see what nature does" (P1)*

Given the controversial nature of restoring historic conditions, the vast majority of respondents were quick to assert that they were not recreating the past *(i)*. Nostalgia, associated with Romantic notions of recreating untouched nature, results in a desire to privilege one historical picture over another and is difficult to legitimise *(ii)*, a point of particular contention given the legacy of the Clearances (Chapt.6). Instead, a number of

panellists spoke of a vision for 'future naturalness' or 'future wildness' *(iii)*, thereby recognising Scotland's uplands to be the result of a series of management processes, and simultaneously valuing the quality of wildness that they have retained as the starting point for a future trajectory *(iv)*.

(i) *"[...] it's not about trying to recreate some past epoch" (S19)*

(ii) *"[...]what stage back in time do we want to return to, if any? I think it is fair to say that that's in the past now and that we should manage for the future" (P1)*

(iii) *"[...] the idea of rewilding is fine, but for us we would sell it in terms of 'we're looking forward' in terms of trying to create really diverse and rich habitats, a kind of future naturalness"(P7)*

(iv) *"[...] somebody who's allowing a landscape to become wilder, or a wilding project, is saying 'this is where we are today' – if we withdraw from that landscape and reduce our involvement in the detail of that then through natural processes we allow the valley to become wilder – and that wilding process will have a range of endpoints and we don't really know what they are"*

This future-oriented perspective helps to explain the antagonism towards the term 'rewilding' discussed in Chapter 6. Notions of 'returning to the past', and the continuation of a historic trajectory, are explicit in rewilding's 're' prefix which represents a major conceptual impediment to respondents willingness to describe their visions as 'rewilding' *(i)*. While 'rewilding' implies historical baselines and 'turning the clock back', ideas of 'wilding' are generally less contentious as it is considered to imply a place for wildness in contemporary landscapes *(ii)*. Furthermore, 'wilding' is arguably more capable of recognising the continuum nature of wildness and its open-endedness encapsulates the idea that any baseline would conflict with the idea of a 'near-natural, no fixed end-point approach' (Whitbread, 2004). In contrast, "rewilding implies it is not currently wild, but it once was" *(S9)*, thereby painting a "black and white picture" *(S1)* and ignoring the reality that Scotland's natural ecosystems exist on a continuum from 'wild' to 'artificial'. The two terms are inherently similar, but wilding is "just a different way you're presenting it really […] a bit more positive" *(S20)*. While rewilding arguably needs to be historically constrained and calibrated to this previous condition of wildness, from this future-oriented perspective (re)wilded areas might end up bearing resemblance to their 'original-natural' state (Kirby, 2004), but future-natural is the aim *(P1)*.[3]

(i) *"The fact that it is 're' means it is putting it back to something it was before" (T3)*

(ii) *"[...] whatever, or however, wild or not the land is, making it into wild land is saying 'okay, the state of the land is as it is currently' and so it's about seeing what happens going into the future" (P1)*

However, the past is not generally considered to be normatively irrelevant. Despite the fact that "we should manage for the future" *(P1),* the significance of palaeoecological records - and other indicators of past land cover – to these discussions indicates that the past remains important to the future of wildlands *(i)* (see Willis & Birks, 2006). Pollen cores have inspired much of the recent wildwood vision (Wynne-Jones, 2012) as the past is considered to be a good advisor for the future *(S13).* As *P7* described it, they might be "going back to the future" because given the limits of upland natural variability perhaps wildland will look like it did before human settlement (original-naturalness) after the wilding process, but it will be a future-natural state *(ii).* Ultimately, a good steward knows the history of an ecosystem *(iii).*

(i) *"[...] if there was evidence of recent woodland cover but there was no seed source then that would be a case for planting" (CO1)*

(ii) *"[…] lots of things have changed, but rewilding means letting nature decide what to do. In most cases this will take us to a state that existed before man started overexploiting the natural capital, so in some ways it will be going back to the future" (CO1)*

(iii) *"It's important we know the history of the landscape […] we can learn from this and it helps us to make sounder management decisions [but] that doesn't mean we're trying to recreate it" (S6)*

For a number of estates the spatial specifics of their aspirations are very much defined by the geographical character of pollen profiles and genetic analysis associated with the historical baselines *(i).* The importance of genetic integrity results in the 'planting estates' only using local source, as much because of the inherent silvicultural practicalities of ensuring productivity as due to the heritage value *(ii).* However, *S19* notes that constraining seed sources to a 500 range in the name of naturalness is probably misguided as it fails to mimic the reality of natural processes; whether through pollination or vector-driven, dispersal is likely to be wider than this *(iii).* Beyond the challenges of practically implementing the spatial boundaries of wildness and naturalness, *S8* raised a scale issue which is pertinent to all conservation discourses; on what scale should the 'damage criterion' which is the bedrock of restoration be applied: the local? The continent? The globe? *(iv).*

(i) *"The good thing is there is genetic material we can use, and okay it may have been affected over 6,000 years but we still have that genetic material" (T1)*

(ii) *"[…] there's real practicalities in there with implications in terms of silviculture if you start bringing in the wrong genetics" (S7)*

(iii) *"I think you have to be quite careful how you think about these things and how they connect with natural circumstances, because in reality the dispersal would probably be much wider than this" (S19)*

(iv) *"[…] we'd look at whether or not the feature is important in UK terms, in local or regional terms […] and would then make the decision based on that" (CO3)*

The significance of this baseline debate to the conceptual congruity of wilding strategies varies hugely from respondent to respondent. For *CO5*, such discussion is valueless because their wildland aspiration is understood as being little more than a contemporary management approach founded upon 'wildness', as opposed to a restoration *per se.* From this perspective baselines are irrelevant *(i)*. However, regardless of the degree to which respondent estates' management plans can be considered a 'restoration', it was clear that the use of baselines was largely implicit in ideas of regaining 'naturalness' and 'wildness' *(ii)*. (Re)wilding clearly necessitates defining truly slippery concepts such as natural and wild.

(i) *"this whole emphasis on 'wilding' is about the human element, it is about reducing the impacts of the human element, so it is not about going back to the last ice age of anything like that. As long as we're clear about the fact that what we are trying to do is reduce the impacts of the human element then those kinds of debates [about baselines] aren't really a problem."*

(ii) *"Where it's appropriate, we aim to remove human infrastructure and artefacts from the estate, especially where they interfere with or degrade the* ***wild, natural*** *quality of the land" (CO7) (author's emphasis)*

7.6.2. What is the natural condition of Scotland?

Whether (re)wilding strategies are retrospective or not, the ecological aspirations of this wildland movement are premised on the 'wet desert' model (Darling, 1955) whereby Scotland's rich, diverse flora and fauna has been reduced to its denuded bare state by centuries of deforestation and human exploitation *(i)*. Motivations for reforesting Scotland are derived from the belief that in the aftermath of the last Ice Age, forest covered the Highlands from shore to shore, leaving only the highest tops free from woodland. Scotland's wildland movement is therefore premised upon two central assumptions;

i) *The belief that the climax vegetation of Scotland is woodland (ii)*
ii) *The belief that humans caused its demise (iii)*

Current wildland aspirations rest squarely on the assumption that the current landscape has been dramatically altered anthropogenically. The 'degradation' language employed implicates human agency in this change, otherwise such transitions in environmental conditions would be considered 'natural change'. However, just as the nature, extent and human-loss criterion for the 'Great Wood of Caledon' has been extensively debated (Smout, 1997, 2003; Warren, 2009a), so respondents presented subtly – or substantially – divergent understandings of Scotland's natural history, and thus of what a 'wilder Scotland' should look like *(iv; v)*. The balance between pinewood and natural moorland was a particular point of conflict between respondent aspirations *(vi)*. Thus, for

example, *P2* described the Scottish Forestry Strategy's ambition of 25% woodland cover by the second half of the century as the "wrong naturalness" *(P2).*

(i) *"What we've got today are landscapes which are frozen. They've become museum pieces [….] in a state of minimal functionality and minimal diversity because they've had many species removed, the bulk of their vegetation removed" (CO7)*

(ii) *"[we are motivated to understand] what the local environment was like before people began to foul it up" (T1),*

(iii) *"[…] usually the problems arise because of the way the landscape and the ecosystem has been mucked up. […]blanket bracken dominating large areas [is] an anthropogenic thing, not a natural thing" (T1)*

(iv) *"[…] if we take a longer term view, the trees would germinate and grow and form a closed canopy" (CO7)*

(v) *"[…] it wouldn't ever reach a closed canopy phase" (P7)*

(vi) *"[…] there doesn't seem to be much space for open moorland in much of this discussion [but] natural moorland is a natural component of natural uplands. […] There needs to be a balance" (P1)*

Scotland's ancient woodland "is far more complicated than some large static forest that people think it was" *(P4)* and simply restoring it on the grounds of past cover offered by pollen profiles oversimplifies its complex, and dynamic, reality. Given that Scotland's (re)wilding debate boils down to finding an appropriate quasi-natural condition for the uplands, it is significant that Scotland's natural conditions are illusory *(i)*. As Wood's (2002) discussion of SNH's vision to restore the Isle of Rum's wildness suggests, different understandings of palaeoenvironmental evidence can result in radically different restoration targets for wildland. At the extreme end, S9 suggests that the current heather moorland landscape, dismissed by some as 'denuded', is, in fact, completely within the natural variability of the uplands *(ii)*. Arguing that the 'wet desert' model, with its overtones of a lost Eden, is entirely wrong for Scotland *(iii)*, this perspective supports Fenton's (2011) new paradigm for the ecology of the uplands which favours a shift away from the current woodland climax model to a natural decline model in which moorland is understood to be Scotland's climax vegetation. Controversially, from this perspective, the current wildland movement is arguably "converting a landscape that has managed to retain significant natural characteristics during most of the Holocene into a 'designed landscape' – damaging over 10,000 years of vegetation and soil development" *(iv)* (Fenton, 2011:37). The degree of historic continuity attributed to the open moorland has significant implications for the degree of alteration that the uplands are considered to have undergone, and therefore whether particular practices and drivers associated with this movement can be considered 'rewilding', or in actual fact, 'unwilding'. Against a narrative of ambiguity and uncertainty about what Scotland used to look like, how should an appropriate quasi-natural state be extrapolated? *(S3)*

(i) *"It is very difficult to be certain about things to do with natural conditions in the uplands and that can definitely confuse debate because people become so committed to their particular understanding" (S20)*

(ii) *"I am of the view that much of upland Scotland represents some of the most natural ecosystems in Europe (S9)*

(iii) *"[....] people saw a few trees in peatbogs and thought people probably cut them down and there should be a lot more – now that's all supposition" (S9)*

(iv) *"[…] the naturalness of the uplands is being degraded by rewilding action. [Promoting woodland is] adding an artificial element into a landscape that has retained a high degree of naturalness" (S9)*

7.6.3. Defining natural

Given the importance of naturalness in wildland discourses, respondents were asked to define the term, and to consider its centrality to their wildland aspirations. The inherent challenge in establishing an operational meaning for naturalness was recognised *(i)*, resulting in one panellist describing how they had become bored of such ceaseless academic debate and opted for positive action instead *(ii)*.

(i) *"[…] I try and resist using the word natural simply because what is natural? (S5)*

(ii) *"[…]so much time spent talking about definitions, and in the end we thought it was best to just get on with it and actually do something" (T1)*

After much deliberation and discussion, a conceptual framework of defining parameters became discernible (Table 7.3). Similar to Chapter 5's discussion, for some respondents naturalness begins in contra-distinction to humans, being defined as the (relative) absence of human influence *(i)*. For some, historical human features are a demonstrable sign of human occupation, and for most respondents this understanding of natural concerns a lack of contemporary influences in terms of the deterministic management perspective. Beyond this elementary value, the fundamental axiom of naturalness is ecological integrity *(ii)*, sometimes defined in accordance with historic benchmarks *(iii)*, but more commonly indexed as biodiversity *(iv)*. While naturalness is typically valued for its "absence of rationally planned human intervention" (Ridder, 2007a:9), the inventory-like concern for species and ecosystems outweighs this value for some. Consequently, many human interventions are justified by respondents in the name of 'naturalness' *(v)* (Section 7.7.2). Intrinsically linked to this ecological integrity concern is the guiding principle of native range *(vi)*. Non-native eradication programmes and native regeneration schemes were consistently described under the auspices of naturalness. While antipathy towards specific non-native species varies hugely from

estate to estate, the aspiration on many estates to restore native woodland cover and reintroduce extirpated species is derived from the importance of nativeness to naturalness. As Chapter 6 details, 'ecological health' is also a critical 'naturalness' axiom in this wildland movement *(vii)*, a quality which is most often associated with natural ecosystem processes and functionality *(viii)*.

Axioms of Naturalness		
Absence of human influence	*(i)*	*"[…] if it's natural then it should be largely un-manipulated by people and have little signs of humans" (S22)*
Ecological integrity	*(ii)*	*"[…] the integrity of the landscape right down to the individual tree is what's so important. That is what we mean by the naturalness" (S6)*
Historical benchmarks	*(iii)*	*"so we're looking at what happened in the past and trying to restore the naturalness that has been lost" (T1)*
Biodiversity	*(iv)*	*"The open hills with their lack of species diversity, particularly prey species for eagles and the like, aren't natural. […] Woodland would build up biodiversity" (S22)*
Nativity	*(v)*	*"[…] if a natural ecology is an important part of wildland, which most of the folk involved in your research seem to think it is, then managing non-native species is really important" (CO5)*
Ecological health	*(vi)*	*"For us, rather than being about turning the clock back it is about how we get the clock started again. [These ecosystems] aren't natural anymore, they aren't healthy. […] We want to restore their former health" (CO7)*
Natural processes	*(vii)*	*"[…] putting back a natural, functioning ecosystem" (T1)*
Perceived naturalness	*(viii)*	*"[…] a lot of people who visit the estate would walk down the woods here in [names particular part of estate] and it's all non-native conifers but because it's mature and there's been regeneration they think 'oh look at the lovely natural pine'" (P1)*

***Table 7.3**: Respondents' axioms of naturalness.*

As these axioms suggest, naturalness in Scotland's wildland context is predominantly concerned with the ecological condition of the land *(i)*. It is largely a biophysical land condition which is virtually synonymous with 'high conservation value'*(ii)*. While most respondents agree that notions of naturalness are predominantly defined through composition (i.e. the physical condition of the land), in accordance with the major shifts in conservation in Chapter 2, naturalness is increasingly defined as the condition where

natural processes dominate *(iii)*. This distinction between composition and process is interesting and is a theme which continues to emerge throughout the remainder of this thesis.

(i) *"[…] I would prefer to talk about naturalness than wildness because naturalness speaks to the land quality more" (P4)*

(ii) *"[…] we're all about nature conservation value so our work is all focussed on the naturalness of this place" (S6)*

(iii) *"[…] the most important thing for me is that we move beyond thinking of natural by managing for specific species because that isn't natural. [….] Giving nature the space to let natural processes dominate is natural" (CO1)*

With such multiple axioms, the 'naturalness' target takes on different meanings in association with different wildland initiatives *(i)*. While both T1 and P7 aspire towards a more natural ecology, for T1 this is defined by a historic benchmark *(ii)*, while P7 is concerned with naturalness as ecological health *(iii)*. In reality, all wildland initiatives aspire towards an idiosyncratic blend of multiple naturalness values *(iv)*. The difficulty arises when different axioms of naturalness are not necessarily compatible with one another. For instance, dogmatic non-native species management policies are not always the most efficient means of retaining and enhancing biodiversity *(v)*.

(i) *"[…] but I, and I think perhaps quite a few others, would disagree with that understanding of natural [another estate's] because what was natural in the past isn't necessarily what will be natural in the future so we really need to stop thinking like that" (P7)*

(ii) *"[…] we're putting back a natural functioning ecosystem, and in order to understand what that is and would be here, we're looking at what it once was" (T1)*

(iii) *"You could argue that by under-planting with Norway spruce you're actually improving the habitat and improving ecological health" (P1)*

(iv) *"[…] it's an 'all of the above' kind of thing" (referring to all of the axioms which were outlined during the Delphi synthesis) (T2)*

(v) *"[…] if we want to promote reds over greys then we're actually going have to plant a species composition in areas where actually it wouldn't have been" (S8)*

Clearly therefore, 'naturalness' is far more complex than the conceptual framework of Table 7.3 suggests. These axioms have been derived from discussions with specialists in the field of nature conservation and wildland management. This, in many respects 'technical', jargonistic framework is unlikely to encapsulate a very important societal axiom: perceived naturalness. While a plantation forestry of Sitka spruce is difficult to reconcile with some axioms of naturalness (e.g. nativity) many of the general public are likely to view this woodland with its populations of deer, squirrels, mosses and lichens

as natural, resulting in what Browning & Yanik (2004:37) describe as the "contradiction of conifers" in which they are framed as both an enhancer and detractor of wildland quality. Naturalness, from a general public perspective, does not necessarily equate to genetic purity, native ranges and historic norms *(i)*. A pertinent question arises therefore: who is best placed to define the 'natural' in Scotland's wildland movement?

(i) *"Probably most people going into the forest wouldn't differentiate between Scots pine and Sitka spruce" (CO5)*

7.6.4. Defining wildness

If constraining the panellists' understandings of naturalness is troublesome, constraining the meaning of wildness is even more ambitious. Recognising the experiential quality of wildness, some respondents described the indefinable nature of this concept, stating that "it means different things to different people" *(T2) (i)*. Consequently, the normalising axioms of naturalness, which provide – to some extent – prescriptive indicators of this largely physical quality, are more idiosyncratic and peculiar in the wildness context. However, when probed, wildness was predominantly described in two broad ways: (i) to describe a landscape quality and (ii) the idea of autonomy in nature and landscape evolution. As a quality of landscape character, wildness in a Scottish context is predictably associated with remoteness and solitude which induces the wilderness experience *(ii)*. While Chapter 6 demonstrated how wildland is not viewed as pristine or untouched in a US wilderness sense, primeval character remains an important attribute of wildness *(iii)*. For many, the absence of modern human artefacts is critical, meaning wildness shares the 'unmodified by human activity' axiom of naturalness, which is equally evident in the self-willed axiom of wildness *(iv)*. In accordance with Turner (1996) wildness is associated with places where order is created according to the principles of the land itself; like America's untrammelled wilderness mandate, wildness is spontaneous nature in the absence of human influence and is thus diminished by the influence of rational agency (Rolston, 2001; Ridder, 2007a). The difference between the landscape quality axioms of wildness and the unmanaged axioms resonates with the distinct experiential and existential understandings of wildness, as implied in Chapter 5. Beyond these perspectives, the alliance between naturalness and wildness extends to the idea that wildness implies a natural ecology too *(v)*.

Axioms of Wildness		
Perceptual/experiential wildness	*(i)*	*[…] there's all sorts of ways of defining it [wildness], and different people will have different views" (P3)*
Landscape aesthetics	*(ii)*	*"[…] it is the physical attributes of the land which make the place feel wild" (CO1)*
Primeval quality (although in a spectrum, rather than untouched, sense)	*(iii)*	*"[…] Wildness is a primeval quality […] like with ancient Caledonian woodland part of its wild appeal is the sense that this is really ancient" (CO2)*
Self-willed	*(iv)*	*"[wildness is] as little intervention as possible and just let the natural processes take their course" (P1)*
A natural ecology	*(v)*	*"What you're looking for [in wildness] is as natural as possible environment" (CO5)*

Table 7.4*: Respondents' axioms of wildness.*

Like naturalness, wildness has multiple meanings across Scotland's (re)wilding initiatives. Given Scotland's distinctly landscape-oriented wildland framing (Chapt.3), it is strongly associated with the sense of wilderness exhibited in Scotland's uplands *(i)*. However, just as wildness in a 'process' (i.e. the autonomy of natural processes) sense is important in international (re)wilding debates, so the 'self-willed' quality of wildness is growing in Scotland (Chapt.6). Critically, therefore, an emerging distinction – and potential tension – between wildness in a landscape sense and wildness in a physical sense *(ii)* leads respondents with an experiential perspective to conclude that wildness is compatible with management *(iii)*, and others with an existential perspective to conclude it is not *(iv)* (Section 7.7).

(i) "[…] wildness is just a perceptual state in Scotland. […] It has to because it is certainly not wilderness, so what else could it be?" (S1)
(ii) "We've got a big power line […], wind turbines, […] a big road going through there, there's a hydroscheme just there, never mind the landscape management practices we do […] I'm really struggling to see the wildness. I can see it in the habitat and the vegetation and some of the wildlife" (CO7)
(iii) "It is possible to have in one's head at the same time an impression of wildness while being intellectually completely on top of the fact that there is hardly an unmanaged square meter of land in Scotland" (S16)
(iv) "Managing for wildness just sounds like a contradiction in terms" (S15)

7.6.5. Naturalness and wildness: synonymous terminology?

Suffice to say, the relationship between naturalness and wildness is intricate (Woods, 2005; Cole, 1996). Both concepts are multi-faceted, represent major conceptual building-blocks of Scotland's wildland movement and lack any unified, operational expression across wildland initiatives. Tables 7.3 and 7.4 demonstrate the degree of shared ground between these concepts, resulting in them being considered interrelated *(i)*, sometimes interdependent *(ii)* and interchangeable concepts *(iii)*, the difference between which is "down to semantics really" *(P1)*. When asked if they could distinguish between these concepts, many respondents suggested that to do so would be academic and philosophical, and therefore unhelpful. Nonetheless, although rarely consciously presented as such, wildness and naturalness have emerged as distinct – if blurred and overlapping – management objectives in Scotland's wildland as Table 7.5 explores *(iv)*. This table is schematic, simplifying a raft of complexity.

(i)	*"[…] the more natural that is the more sense of wildness you will get, it contributes to the wildland experience" (CO5)*
(ii)	*"[…] if it's natural it is generally wild too" (CO2)*
(iii)	*"I am pretty comfortable with the idea that they mean the same thing" (P6)*
(iv)	*"[…] you could have a woodland of wild appearance, but it could be completely or largely non-native" (P1)*

Distinguishing value areas	*'Natural'*	*'Wild'*
Ecology vs. Landscape	***Predominantly a biophysical descriptor*** • Principally describing an ecological condition and character	***Predominantly landscape descriptor*** • Principally describing landscape character (although increasingly describing self-willed autonomy (i.e. untrammelled))
Teleology ***(strongly linked with management interventions)***	***More composition (endpoint) focussed*** • More specifically defined aspirations over the endpoint of naturalness *"There's going to be areas of bog woodland and scree and grassland within that" (CO3)*	***More process focussed*** • Little consideration of the product of their work because the value is in the self-willed process *"There's not any specific expectation as to what will happen in specific areas" (P1)*
Human interventions ***(see section 7.6.6)***	***More compatible with human intervention*** • In accordance with more endpoint-oriented expectations, (sometimes deterministic) interventions are considered important to delivering naturalness *"[…] we're now considering treatments like scarify and preparing the seed bed because without that we're struggling to get natural levels of regeneration" (CO2)*	***Less compatible with human intervention*** • The self-willed axiom of wild makes its reconciliation with human management more difficult *"If […] you start intervening too much then it isn't wildland anymore" (CO4)*

Table 7.5*: The main areas of difference between conceptions of 'natural' and 'wild'.*

Sections 7.6.3 and 7.6.4 suggest that these concepts are distinguishable on the basis that naturalness is typically defined in biophysical, ecological terms, while wildness is most

commonly described in terms of landscape character. Respondents were generally in support of this distinction *(i).*[4]

> *(i)* *"I think it is fair to suggest that wildness is about the character of these places from a human perceptions perspective, while naturalness is more of a 'landy', conservation term" (CO4)*

Both naturalness and wildness explicitly value the absence of rationally planned human intervention. However, during these discussions it became evident that notions of 'pristine', 'untouched' and 'undeveloped' are far more central to wildness than naturalness, and thus their compatibility with 'people', or 'culture', in the landscape is different. The compositional value of naturalness, and even its self-regulation through natural processes, are largely uncompromised by the mere presence of people *(i).* While humans can erode species composition and structure, managing access is a more critical issue to the existential and landscape components of wildness *(ii).* This has implications for the compatibility of historical cultural dimensions with these two values. Naturalness is typically viewed as more of a contemporary, current descriptor of the biophysical quality of the land and therefore remains largely uncompromised by the cultural history of the land, whereas heritage is more problematic in conceptions of wildness, a challenge of negotiation which, as Section 7.4 details, is approached differently on different estates.

> *(i)* *"More people doesn't necessarily mean less dotterel or less black grouse" (CO4)*
> *(ii)* *"[…] careful management of visitors is important if you're trying to create a sense of wildness" (CO5)*

A key theme, and one which is important to the remainder of this thesis, is the idea of teleology in relation to wildland aspirations and the significance of 'endpoint' and 'process' as divergent management axioms. In conjunction with Clementsian ecology, the 'natural' which some respondents speak of is inherently concerned with 'destination', in which the success of (re)wilding efforts is gauged by the proximity of the (re)wilding product to an anticipated endpoint, an architectural plan for wildland almost *(i).* Despite the predominance of natural processes, naturalness is principally defined through species composition *(ii).* By definition, the self-willed axiom of wildness means that this endpoint is undefined because process and function takes precedence *(iii).* As at Ireland's Wild Nephin project (Antonelli, 2013), from this

[4] However, as Chapter 6 implied, this distinction is complicated by the emergence of a new way of thinking about wildland in Scotland as places where natural processes prevail.

process perspective where nativity, composition and species diversity is of less importance, some wildland initiatives are less concerned with practices associated with the eradication of non-native species, so long as they are not curtailing critical ecosystem function. In fact, on the basis of the contribution to ecosystem function they might be considered an important part of a future wildland ecology *(iv)*.

(i) *"[…] we know what percentage of the Highlands was woodland and what type of wood and that is what we want to achieve" (CO4)*
(ii) *"[another estate is] still lacking a whole range of species which should be there so they still have a way to go" (S17)*
(iii) *"To rewild – that's the endpoint of rewilding. […] The endpoint shouldn't be defined any more than that" (S9)*
(iv) *"If a few larch trees helps the black grouse then I'm not going to pull them out. That's the reality of it" (CO4)*

The intrinsic relationships between biophysical character, natural processes and landscape character makes the interface of these ideologies in a practical context rather complicated. For some respondents, the biophysical character of natural landscapes induces the 'sense of wildness', meaning wildness is a subset of naturalness *(i)*. For others, naturalness is simply one part of wildness; wildness can be manifested in landscapes which do not retain the compositional integrity associated with a high quality of naturalness *(ii)* (Section 7.3). Evidently, these terms are not mutually exclusive and as such, while an estate might be naturally align with the axioms of naturalness or wildness, their management typically remains sensitive to the other *(iii)*. As is becoming increasingly apparent, Scotland's wildland initiatives encompass an idiosyncratic blend of these different naturalness and wildness axioms, and this has significant implications for what a desirable 'wilder future' might look like, and how it might be accomplished.

(i) *"Anything that is natural and large is going to be wild by definition" (S19)*
(ii) *"[…] naturalness is only one part of considering somewhere to be wild, because actually a landscape which is very unnatural can often have a really strong sense of being wild" (S1)*
(iii) *"[…] the quality of the habitat and species is more important [but] we ensure our management has as little impact on landscapes aesthetics as possible" (S6)*

7.6.6. Management implications of 'naturalness' and 'wildness'

Recognising the distinctiveness of naturalness and wildness in wildland discourse has practical implications as these goals interface with management differently *(i)*. Defined through largely preordained, biophysical qualities, the more compositional parameters of naturalness provide baselines against which deviation from 'natural conditions' can

be assessed *(ii)*. As such, 'damage' criteria apply, and 'treatment' administered (i.e. preventative/restorative interventions) *(iii)*. In contrast, wildness is arguably harder to reconcile with management, particularly from an existential perspective *(iv)*, but experientially too sometimes *(v)*. Consequently, while tree shelters and deer fencing are examples of management measures which are not only compatible with, but often employed in the name of, naturalness, against the existential and experiential axioms of wildness, such interventions are likely to be considered 'detractors'. Echoing Chapter 5's conflicting mandates discussion (Section 5.3.2), tensions between 'naturalness' and 'wildness' as management objectives are beginning to emerge. In the altered, cultural landscapes of the Scottish uplands, enhancing naturalness suggests manipulative restoration, while ecological wildness implies giving greater autonomy to natural processes with little prescriptive expectation of what the resultant landscape will look like. The blurred distinction between naturalness and wildness in these discussions suggests that wildland managers do not distinguish between these management objectives. As Chapter 5 suggests, the ramifications of this are significant and are explored in the Scottish context in Chapter 9. The significance of conflicting mandates in this chapter is to introduce the fact that as (re)wilding initiatives face tricky value-based management quandaries, some significantly reactionary, *ad hoc* management measures emerge. At times throughout these discussions a significant amount of discordance between visions and practices has been evidenced, a consequence of the fact that underlying management philosophies do not necessarily deliver the 'desired result'. This can cause tension within individual (re)wilding initiatives as individuals reach different conclusions on whether or not to remain aligned with their principles *(vi)*. Is a restored ecology or a species rich landscape worth the trade-off in wildness in terms of non-intervention? Management positions are seemingly schizophrenic at times as respondents grapple with such philosophical quandaries.

(i) *"[…] I think it's probably fair to say that the idea of naturalness can cope with management a bit better than the idea of wildness can" (S14)*

(ii) *"[…] when it didn't respond in the way that we'd expected we had to reconsider that approach" (CO7)*

(iii) *"[...] we now might have to interfere if the woodland were encroaching onto certain areas where we would discourage it" (CO4)*

(iv) *"[…] the intervention [needed] would be so significant that you would stop other processes happening and the valley wouldn't develop as a wilder place" (S7)*

(v) *"[…] it can be a major headache getting the level of acceptable management right, you know, like whether you should have interpretative panels and the like, and making sure any management you are doing is sensitive to that sense of wildness" (CO5)*

(vi) *"[…]it's an issue that is going to be pretty divisive amongst all of us here […]we have always had a presumption against fencing but whether we will have to retract on that remains to be seen" (CO2)*

7.7. The Interventionist Paradox

As discussed in Chapter 5, the place of management interventions in wildlands is controversial as notions of wilderness restoration occupy a contested space between human will and nature's autonomy (Dunn, 2009; Landres, 2010). Scotland's wildland movement is characterised by all manner of positions on the interventionist spectrum as (re)wilding describes some radically divergent management courses towards a largely common aspiration *(i)* (Chapt.6). "Restoration may simply involve removal of a disturbance agent; however, in many cases it will require active manipulation of ecosystems" (Cole & Landres, 1996:179). Consequently, while some respondents struggle to reconcile 'wildness' with management *(ii)*, others cannot comprehend how their vision of a wildland could be manifested without human intervention *(iii)*.

(i) *"[…] in most respects we have a pretty similar vision to [names CO7]but we believe the best way of getting there is different to the route they're taking" (T1)*

(ii) *"[…] that's why we don't really talk about rewilding because we did intervene and plant 300 hectares of trees. […] It didn't occur naturally"(T2)*

(iii) *"In many cases those opting for 'rewilding' have had to intervene significantly" (S20)*

Whether panellists are at ease with strongly interventionist approaches to wildland restoration or not is a function of divergent perspectives on what *detracts* from 'wildland quality'; whether such management is considered an assailment on the very 'wildness' panellists seek to enhance *(i)*. As Section 7.6.6 details, different management objectives and ideological positions interface differently with human management *(ii)*. Similar to international experiences, interventionist manipulations are considered critical to maintaining and restoring a natural ecology, but they simultaneously jeopardise the 'intrinsic worth' of 'untrammelled' nature *(iii)* (Cole, 2000a; 2000b). The degree of intervention deemed appropriate is therefore largely informed by the relative weighting applied to the various wildness and naturalness axioms above *(iv)*. These weightings are the results of one's conceptual position on the place of people in nature. As wildland initiatives work towards a fusion of these different axioms, an array of flavours between 'humans as nature managers' and 'nature as capable of managing itself' emerge.

(i) *"[…] to me, if you're trying to improve the wildness of that place the last thing you do is start planting trees and the like" (P6)*

(ii) *"[…] he [a particular rewilding advocate] and I both agree with what rewilding is – a sense of nature in charge. But this depends on your starting point [e.g. how ecologically degraded you think Scotland is] both believe in rewilding but the approach is completely the opposite" (S9)*

(iii) *"[…] it is difficult because intervening like that does go against the grain in terms of valuing nature for its intrinsic, unmanaged worth" (CO7)*

(iv) *"There are certain things where you wouldn't intervene because that would be micro-managing and so sometimes we have to take stock and think about when it's appropriate and when it's not" (CO1)*

7.7.1. 'Managing wildness' is paradoxical

Despite the multiple meanings associated with 'wild' and 'natural', for some respondents there was no getting beyond the fact that, in popular rhetoric, wilderness values are the qualities and attributes of non-use land and places exempt from human influence *(i)*. Ironically, it is the (comparatively) 'wild purists' and 'anti-wildland' respondents who focus on this paradox; for the former because they prioritise the intrinsic, existence value of wildlands as the paramount value *(ii)*, and for the latter because presenting 'wild' as synonymous with uncultivated, uninhabited and unmanaged means management practice cannot be reconciled with wildlands, thereby exiling notions of 'wildness' from Scotland's working, living landscapes. If wildness is defined as being antithetical to people then it cannot be enhanced by human technological prowess *(iii)*.

(i) *"If it's meant to be natural and wild and you start intervening too much then it isn't wild land anymore" (CO4)*

(ii) *"[…] for it to truly wild we need to stop managing it for what we want it to be and accept that what is wild is the product of complete natural processes and non-intervention […] planting trees and the rest of it makes it unwild" (S9)*

(iii) *"[…] you can definitely impasse wildness through rewilding" (S1)*

7.7.2. Rationalising interventions: unnatural starting points

Aware of the conceptual dissonance of 'managing for wildness', some panellists demonstrated significant reflection on how interventionist practices can be rationalised in the name of a wilder future (Table 7.6). Most commonly, panellists excused their interventions by referring to the 'unnatural starting points' of the upland environment *(i)*. An outright hands-off approach might produce a wild (as in autonomous) landscape, but the unnatural components would remain; it would not be natural, which is regarded an equally important quality *(ii)*. If humans have altered the upland environment to the point that intervention is now necessary to retain even this compromised quality of naturalness, then there is a moral obligation, a duty of care, to continue managing *(iii)*. If humans had not already intervened so much there would not be the need to intervene now.

(i) *"What we're trying to do is stop spruce dominating that process in the future because it had an unnatural starting point as a species […] it was planted and managed as a plantation" (S7)*

(ii) *"If we just fenced it then you're just creating this unnatural habitat" (CO4)*

(iii) *"[…]in ecosystems in which change has already been manifested by the hand of man it is inconceivable to allow nature to make sound conservation choice itself when it is already starting from a different position" (S1)*

As a consequence of previous human interventions there are significant perturbations to natural processes in wildland. For some respondents interventions are rationalised solely on the basis of removing these barriers to natural functions *(i)*. For instance, simply removing fencing releases natural processes to operate unconstrained (and contribute to the sense of wildness). For some panellists, in accordance with Chapter 6's passive (re)wilding approach, removing perturbations (e.g. fencing, non-native species) are the only interventions which are justifiable in the name of wildness, suggesting that doing this makes a far greater contribution to both naturalness and wildness than more directive intervention *(ii)*. But other panellists (more active-rewilders), argue that Scotland's truncated, altered landscapes require greater support, hence the emergence of practices such as planting, harvesting seed sources, scarifying and reintroductions; if the "land is too degraded assisted regeneration may be needed" (Navarro & Periera, 2012:908) *(iii)*. From this more proactive stance, the fact that Scotland is not a pristine, untouched environment nullifies the idea that management intervention might degrade the relative wildness which has been retained; the purist, virginal value of these landscapes has already been sacrificed *(iv)*. But, while restoring pristine wilderness is unachievable, a quality of 'wild' remains attainable through management *(v)*.

(i)	*"[…] there are things like juniper and rowan that are supressed within the plantations and we're trying to release them" (CO3)*
(ii)	*"[...] if all the work on creating native woodlands was spent on controlling invasive species I think we'd have a much better ecology" (S9)*
(iii)	*"[…] there is this seeming paradox of, on the one hand talking about 'wild' and 'rewilding' and on the other hand intervention [but] left completely to its own devices it [the land] would recover, but it's not being left to its own devices so we need to assist the initial stages of that at least" (CO7)*
(iv)	*"[…] does intervention compromise natural? Yes. But I suppose the naturalness was compromised a long time ago" (CO3)*
(v)	*"Here we don't have a pristine environment and so it's just about tweaking the management to promote wildness" (S8)*

In accordance with PanParks (2011:3), therefore, the idea that "[a]s long as restoration techniques serve the ultimate goal of resetting processes they may need to include active measures" is significant to wildland initiatives. Scotland's upland environment has been maintained in a stable state for many decades (Davies *et al.*, 2006). Inducing disturbance to reset natural processes is therefore seen as critical by many panellists *(i)*. With innumerable missing linkages and processes, crucial ecological functions and services are truncated *(ii)*. While taking a hands-off approach would unquestionably deliver 'wild processes', it is believed it would result in the loss of many species of conservation interest and would not deliver the desired wildland vision outlined in Chapter 6 *(iii)*. In the absence of critical ecological building blocks, missing parts of the

ecological jigsaw need to be restored if natural processes are to be fully operational *(iv)*. Natural processes require these constituent components *(v)*.

(i) *"[…] so it might be that we have intervene in those areas to create or replace the lack of disturbance […] to kick-start the system" (S7)*

(ii) *"[…] with no disturbance this will all go rank and overgrown and seedlings won't be able to penetrate it so we need to add the disturbance" (CO3)*

(iii) *"[…] taking a passive approach on this isn't going to deliver on the multiple objectives" (S20)*

(iv) *"The problem with natural processes is that they aren't – they aren't natural because there processes missing"(CO3)*

(v) *"[…] it is then quite difficult because we are all about natural processes but we are hammering deer so we are getting involved in a particular intervention. How do you square that circle? Our argument would be that because we don't have all the bits there we have to do something" (S13)*

As alluded to in Chapter 6, in defence of intervention, many panellists described their interventions in degrees, believing that dichotomising intervention and non-intervention is artificial and unhelpful in humanised landscapes. Viewing management in degrees means that many estates will try to do the 'least possible' *(i)*, thereby rationalising interventions on the basis of what is deemed absolutely necessary. How interventions are performed is also of unquestionable significance for many panellists because using interventions which mimic natural processes was a critical theme in rationalising interventions *(ii)*. Although not always practicable, the idea that using the most natural means possible to bring about change was clearly critical for the wildland ethos of many respondents as they aspire to keep their interventions as 'natural' as possible *(iii)*.

(i) *"I don't consider that [provide an example of something] to be heavy intervention, that is hands lightly on"*

(ii) *"[…] we have to mimic the effects of those things [like big fires], so that's why we're pulling down trees that have been planted artificially and are too dense" (CO3)*

(iii) *"Boar are great because they offer an alternative to mechanised ground preparation" (CO7)*

While some respondents accept that they will "probably have to intervene in perpetuity" *(CO3)*, in many instances the seeming cognitive dissonance implicit in talking about natural processes alongside highly interventionist practices can be resolved by acknowledging respondents' 'means to an end' perspective *(i)*. Intervention for many is "[…] a potential necessary evil, and definitely should be temporary" *(S8)*. Interventions

are often time-limited *(ii)*, and in some cases have already started to be withdrawn *(iii)*. Although management might not be withdrawn for over a hundred years, in the evolution of today's landscape *S7* pointed out that is relatively short-term.

(i) *"Using enclosures and the like is a means to end. And it's better than the other option which is to shoot everything that might mangle a tree" (S19)*

(ii) *"[…] it is more interventionist at the moment – what we're hoping to do is find a level where we, as modern 21st century people, can operate alongside the natural processes giving them freedom to the greatest extent that we can whilst we have to manage some elements" (S7)*

(iii) *"[…] at places like [names a specific area] the point has almost been reached where intervention is at the same level as natural processes are, so now it's a case of stand back and not making all these judgements anymore" (S7)*

Beyond this philosophical defence of intervention, some significant practical and pragmatic arguments for intervention were cited *(i)*. Scotland's remnant fragments of Caledonian pinewood are in a state of terminal decay (Featherstone, 2010). The limited reproductive capacity of this "geriatric forest" (Featherstone, 2010:18), and the ticking clock marking the slow demise of a valuable ancient seed source, provide the basis for a very matter-of-fact reason to accelerate natural processes *(ii)*. Many 'planting estates' acknowledge that natural regeneration would occur as a result of simply ensuring favourable conditions (e.g. reducing deer, creating niches for young seedling establishment), but natural processes is a tense waiting game as this critical seed source reaches its expiry *(iii)*. The reality is that natural processes are often too slow for land managers who want to see rapid change *(iv)* and natural processes are not always as effective at delivering the desired results as management interventions can be. However, non-planting respondents could be quite critical of the timescales within which strongly interventionist initiatives expect to see change *(v)*.

(i) *"[...] we probably do intend to use planting, because otherwise we will have to wait 500 years to see any kind of change […] all the dwarf willow on the estate are currently the same sex" (P7)*

(ii) *"We've not got much left of what was here before to work with – we need to do something" (CO3)*

(iii) *"[…] we had a tree regeneration survey in 2002 – 2003 which suggested that the rate of expansion wasn't as quick […] as hoped […] but estimated that without further interventions it would take 500 years for us to reach the tree line, and the conclusion was that that was too long" (CO3)*

(iv) *"We get more regeneration on a burnt area than an un-burnt area […] about 30-40 times more*

(v) *"It [re-establishing a naturally regenerating forest] takes time. It is not something which is done in a generation" (P3)*

Other respondents defend management interventions in wildland on the basis of 'process' versus 'composition/endpoint'. These respondents would describe their management practices as non-deterministic *(i)*. This argument is predicated on the fact that by intervening to reinstate natural processes, a quality of self-determination is reinstated *(ii)*, a case of intervening to reduce intervention into the future (similar to the US discussion of restoring untrammelled, Chapter 5). Interventions are thus justified on the basis that they remove non-natural barriers to processes, for instance the removal of a bridge causing sediment to build-up to leave an Atlantic salmon (*Salmo salar*) run unobstructed *(S7)*. In doing so, natural processes are restored, but the results of this process have in no way been determined *(iii)*. The endpoint of the ecosystem remains self-willed *(iv)*. From this perspective, nature's autonomy has been abetted, 'wildness restored' one might say *(v)*.

(i) *"[…] you're not determining an end point by doing that – you're releasing natural processes and allowing the ecology of the valley to function properly" (S7)*

(ii) *"If you can remove the negative anthropogenic influences the you can depend on nature, to a large extent, to take over" (T1)*

(iii) *"[…] it is about saying to nature "here are the building blocks, assemble them as you wish" (P7)*

(iv) *"And although the valley we see today has been severely impacted by people – so most of the trees are not native – they still fall over, they still regenerate, they still have a level of self-will" (S7)*

(v) *"[…] if we can restore these natural processes then we have restored wildness because we will be able let the land evolve as it will" (S23)*

Some respondents make no apologies for, or defence of, their direct and proactive perspective on management in wildlands *(i)*. Non-intervention may be a desirable wildland virtue, but in Scotland's degraded environments it is not considered to be a feasible option. For many individuals, 'doing nothing' in this 'unnatural condition' does not present the most 'natural solution'; it will not produce a natural result *(ii)*. But what then is the most virtuous, defensible alternative? For some, the answer is to act consciously and with conviction, acknowledging that the non-intervention position is being compromised for the greater good *(iii)*. Amongst many of Scotland's (re)wilding initiatives, management is presented as the 'least-worst' option available *(iv)*.

(i) *"[…] we could have waited a hundred years, just fencing the places off, maybe managing some invasive species, deer numbers and see what happened, but we were more keen to be direct"*

(ii) *"[…] the land has been managed too much and altered too much to take our hands off completely because, at the end of the day, that's not going to result in a natural landscape is it?" (T2)*

(iii) *"[...] we're all about non-intervention, but the practicalities are that doing nothing is an intervention so you have to make your decisions with that in mind" (CO1)*

(iv) *"[…] in an ideal world, as with everything in conservation, we wouldn't need to intervene, but we are where we are so the management that we're doing is just trying to make the best of a bad job, of a bad situation" (S7)*

S12 suggested that the contingent value of 'untrammelled land' is academic anyway; Scotland's wild land is subject to management manipulations, but in reality this is no different to wilderness in any other country *(i)*, a point largely supported by Chapter 5. In the rapidly changing environments of the 21st century, the reality of intervention for wildness calls for pragmatism *(ii)*.

(i) *"You ask anyone from European National Parks the question, 'if an alien species was found in the middle of one of these wildernesses would you go in and take it out?' The answer is yes they would, of course they would" (S12)*

(ii) *"To be honest, these days with climate change and everything will trees be growing about 2,000 feet and will they encroach on blanket bog? I would say yes, so my own personal view is that, yes, there will be intervention" (CO4)*

Fundamentally, interventions are rationalised through the normative foundations of Section 7.5 and through appealing to scientific principles. Panellists frequently described expectations of 'what it should be like' according to scientific theory *(i)*, thereby providing a rationale for action *(ii)*.

(i) *"[rewilding] needs to be based on a scientific understanding of what the characteristics would have been there without intervention, or limited intervention" (S9)*

(ii) *"[…] on the back of that survey and the research associated with it we've upped our effort on that front [referring to deadwood]" (CO3)*

Rationalising Management Interventions	
Releasing and returning essential pieces of the ecological jigsaw	*"You just have to look at what you've got […] what pieces of the jigsaw you have and restore the pieces and elements that you don't" (T1)* *"[…] a case of let's put things back which we perceive to be missing and then allow it to decide for itself where it's going to end up" (CO7)*
Means to an end interventions (e.g. action to mitigate impacts of potential threats)	*"[…] the intervention feels like a means to an end" (CO3)* *"[...] we have to intervene for the greater good, there's no question about that" (P4)*
Time-limited, spatially discrete intervention,	*"[…] fencing, preparing the ground and planting trees, but that's a relatively short term strategy for specific areas of the estate"(CO7)* *"Now we've got a young, native forest it will be rewilding by itself and our management can reduce. However, we do still manage, deer especially" (T1)*
The minimal intervention necessary	*"[…] trying to have minimal intervention, but that doesn't mean no intervention" (P1)* *"[…] we try to use minimal vehicle use" (CO1)*
The most 'natural' means possible	*"[…] we've got contractors out doing this with brush-cutters but, again my preference would be to use cattle (CO3)* *"[using cattle] it's nearer to natural processes […] it's not like using something mechanical or something" (CO4)*
Non-deterministic interventions	*"[…] we are choosing which trees to take out but we can maybe modify our choosing process so it becomes a bit more organic and natural and less deterministic" (S7)*
The worsening situation (e.g. time pressure in terms of losing viable seed source)	*"[…] there are certain things that require us to accelerate that [the frequency and intensity of interventions], so if we've got blaeberry that we're about to lose because the canopy is closing in, if we've got juniper or birch we're about to lose then there's an urgency" (CO3)*
Rewilding is a process, not a goal	*"[…] if rewilding is about better quality habitat then it is about change and intervention is needed to bring about that change […] I don't think rewilding means no intervention. It might mean a less intervened landscape in the future, but that's the ultimate goal" (P4)*

Table 7.6*: Common justifications for management interventions in wild land.*

7.7.3. Wild design and wild artefacts?

Some respondents do not believe that interventionist management needs a defence. For one respondent this is because of a metaphysical reconciliation *(i)*, for others it is because they do not value wildland in the existential, untrammelled sense that panellists above do and are thus much more comfortable speaking of intervention in a human design sense *(ii)*. Existential vs. experiential wildness is clearly significant to the place of management in wildlands. As P3 pointed out, "there is a difference between something which has that wild feeling and something which is actually wild". From an experiential wildness perspective the need to rationalise management intervention is less significant because the emphasis is on a "wild impression" as opposed to the more metaphysical value of self-willed land. In some cases, the interventions that panellists described are thus in accordance with societal values and expectations of wildland, as opposed to releasing or restoring natural processes and a natural ecology *(iii)*. For example, S7 speaks of the need to be heedful of visitor expectations when intervening in wild places, paying particular attention to the "big four" – "the lake, the forest, the mountains, the river" *(S7)* – as particular contributors to a sense of wildness. Equally, from an ecological (compositional) perspective, T1 also referred to the need "to design it [the woodland] properly" in the absence of a natural starting point, placing greater value on ecological structure as a value than self-willed autonomy. This emerging design component within some wildland initiatives concerned some respondents greatly, who suggested that (re)wilding should not be about "forcing it [nature] to fit with our preconceptions" *(S17) (iv)*.

(i)	*"[…] these are cultural landscapes and humans are part of that so if we are managing for the good of nature, and for conservation benefit, then I don't see the problem with managing" (S1)*
(ii)	*"[…] management wise there are definitely things you can do to retain and enhance the sense of wildness" (CO5)*
(iii)	*"…elsewhere in the valley we are looking at, and we have removed, conifers that have very straight boundaries or which sit in the valley bottom and block your view of the mountains and the river" (S7)*
(iv)	*"[…] they're [names an estate] doing active management in order to get the product that they want; the 'rewilding' product" (T3)*

The 'wild by design' debate brings into focus a philosophical debate over the value of 'restored wildlands'. Respondents were asked to reflect on the idea that, if wildness is largely defined in contra-distinction to humans, then is/will this restored wild character in the uplands be artificial through its association with human creativity? Many respondents struggled to engage with the profundity of this point, but some (re)wilding adversaries took the opportunity to suggest that this movement is "bogus" because any changes which result will be the product of human intervention *(i)*. While (re)wilding

initiatives "take the moral high ground" implying that people can exist in some abstract realm apart from nature, in reality, "even non-intervention is a human decision to allow the landscape to evolve in a particular way" *(S20) (ii)*. (Re)wilding is as much a cultural facet and fashion as any other land management approach *(iii)*.

(i) *"[...] even rewilding in its most extreme form is a choice and therefore by definition, to my mind, it's still a cultural landscape because we're making choices" (S12)*

(ii) *"[...] you can't take some abstract position on this [...] everything we do, and everything decision we make, has implications for nature and the land, including deciding not to intervene" (S1)*

(iii) *"[...] look at the way that Forestry Commission have developed trees they've gone through phases – fashions- so we should be realistic about what we're talking about becomes a cultural facet" (S12)*

The authenticity of 'restored wildlands' is intrinsically based on the compatibility of intervention and wildness, which, as has been demonstrated, varies in accordance with the different axioms of wildness employed. Where wildlands are framed in experiential or nature conservation terms, they are more compatible with ideas of active restoration *(i)*. When defined in terms of the existential value of natural processes this 'faking nature' debate is more challenging. However, as a number of (re)wilding proponents noted, pragmatism in this wildland movement is key; from a continuum perspective of wilderness values, the role of human agency in restoring wild places cannot render such places valueless *(ii;iii)*. As such, they were often candid themselves about the fact that enhancing wildness is not a completely natural solution *(iv)*.

(i) *"[...] if management is sensitive to this wild quality, and ultimately enhances this overall wild experience then I don't think they're really in tension, are they?" (CO5)*

(ii) *"[...] the probability of it is that if a system was more ecologically managed then it will probably be more natural – or appear natural. It's hard to imagine a more ecological based habitat management system producing something which would seem less natural" (S12)*

(iii) *"[...] because what we have is a cultural landscape what we will end up with is a cultural landscape, but we could get a heightened sense of wildness" (S1)*

(iv) *"[...] even if you're attempting to recreate a postglacial landscape and boreal forest and all that, it's always going to be a product at the end of the day of what is there today, which is the result of lots of human intervention" (S20)*

7.8. Summary

Scotland's wildlands are unusual when set against international wilderness norms; they are a distinct blend of natural and non-natural causative factors acting in concert over nine millennia. As such, these hybrid environments challenge traditional wilderness and restoration values and discourses. In part, this chapter has therefore demonstrated how wildland initiatives are faced with the difficulty of understanding how the (re)wilding paradigm applies to these equivocal landscapes, and how these understandings and associated approaches are rationalised. Ultimately it demonstrates the importance of acknowledging, and respecting, the historical and cultural aspects of Scotland's wild places, thereby showing the incongruity of purist perspectives with Scottish (re)wilding. While pragmatism in management was a central theme in Chapter 6, this more philosophical discussion suggests that it is equally crucial to achieve conceptual clarity over 'wildness' as a management aspiration in these ecologically truncated, historically-laden cultural landscapes. Although aspects of purist ideology are apparent in this chapter and the last, discourses which celebrate the hybridity of these wildlands are prominent as purist fundamentalism fails to translate into practical management.

The philosophical underpinnings discussed here are the unseen - and often unquestioned - bedrock of the management discourses explored in Chapter 6. These conceptual foundations and justifications are clearly not uniform to all wildland estates as various parameters and baselines are used to define individual (re)wilding aspirations. The level of intervention deemed appropriate, its compatibility with cultural heritage and the significance of different axiomatic principles (e.g. landscape vs. ecological) are a function of how fundamental values such as 'wildness' and 'naturalness' are conceived. Divergent visions for a 'wilder Scotland' are therefore the result of different positions on what 'wildland' is. Moreover, given the emergent nature of concepts and practices relating to (re)wilding, the discourses associated with these diverse initiatives are still evolving and thus subject to much rethinking when unforeseen consequences of specific strategies arise. (Re)wilding in Scotland is currently a case of "adaptive action research" *(S1)*, as opposed to a well-formulated, cohesive strategy. With so many different understandings of 'natural' and 'wild', the criteria for understanding the 'right' quasi-natural condition for the Highlands is malleable; the challenge is, therefore, "[which] states of naturalness should be subjectively selected as the template for defining the goals of restoration?" (Warren, 2009b:258). The following chapter considers the nature of different (re)wilding trajectories in greater detail.

Chapter 8

Degrees of '(re)wilding': a taxonomy

8.1 Introduction: chapter rationale

Chapters 6 and 7 revealed the complexity of Scottish (re)wilding discourses and identified a number of fault-lines associated with (re)wilding history-laden, cultural landscapes. '(Re)wilding' was branded an ambiguous, catch-all term which might describe a multitude of practices and underlying philosophies. It is not the objective, clearly mandated term that it is increasingly presented as in academic literature (e.g. Carver, 2013; Sandom *et al.*, 2013; Reardon, 2014). Instead, it represents a continuum of ideological perspectives which are only fully coherent when conceptualised as a whole. While one end of the (re)wilding continuum might be characterised by, arguably, more 'radical' approaches such as the reintroduction of predators or land abandonment, the other end may be concerned with more familiar conservation practices such as culling deer or planting trees. To fully understand the meaning of this environmental ethic, one must explore these '*degrees of (re)wilding*'. This chapter therefore examines the nature of these subjective nuances by developing a taxonomy of wildland discourses derived from the results of a Q-methodology study.

Therefore, the aims of this chapter are:

- *To explore areas of commonality and divergence across different meanings of rewilding*
- *To develop a taxonomy of wildland management approaches associated with existing '(re)wilding' applications*
- *To consider this taxonomy in relation to fundamentally different underlying philosophical commitments*

This taxonomy aims to move 'wildness' in Scotland beyond the dualisms within which it can sometimes be framed (i.e. wild/artificial, natural/cultural) by demonstrating the way in which it is conceived through disparate parameters and manifested along a continuum. Consequently, the positions which define this taxonomy are not mutually exclusive; wildland discourses are a fusion of many different wildland frames. Accordingly, the rationale for this taxonomy is in its provision of an analytic framework for evaluating these currently convoluted, and often conflicting, management frameworks.

8.2 The Q-Sort: foundations of a taxonomy

The data-set for this Q-study is seventeen 'Q-sorts' (the ranked distribution of the Q-set for each estate; see Chapter 4) each representing the viewpoint of a Scottish '(re)wilding' estate. Statistical analysis of this Q-data aims to identify clusters or groups of related items or 'factors', which are most simply understood to be areas of shared meaning (Barry & Proops, 1999). The aim of this methodology is to describe, account for and explain as much of the variability among these correlated Q-sorts as possible by reducing these individual viewpoints to a few representative factors. As a form of factor analysis, and therefore a reduction technique, the primary aim of Q-methodology is to find the most appropriate solution to explain the observed variability. Accordingly, Q-methodology operates on the assumption of 'finite diversity', meaning rarely are there as many discourses identified as there are participants (Barry & Proops, 1999; Watts & Stenner, 2012).

Data Parameters		
1. Study variables	*No. of Q-Sorts (P-set)*	*17*
2. Study sample	*No. of Statements (Q-set)*	*32*
3. Study range	*Range in distribution*	*7 (-3 to +3)*

Table 8.1*: Data parameters for this Q-study. Seventeen estates (the P-set) with different demographics, motivations and aspirations for the future of the wildland they manage were asked to rank order 32 statements (the Q-set) into a fixed distribution grid, which ranged from -3 to +3. See Chapter 4 for a full explanation.*

Because this Q-study forms part of the broader adapted Delphi model explained in Chapter 4, it also uses insight gleaned from respondents comment on the synthesis document for this second round of discussions (see Appendix VIII).

8.2.1 Analytic procedure

All Q-sorts were entered into PQ method, a data analysis software package, and subjected to the analytic procedure detailed in Table 8.2.[1] Prior to this, the forced distribution grid was entered, detailing the -3 to +3 ranking of the grid columns, meaning that each item in each Q-sort could be attributed a ranked value. This basic DOS package, specifically designed for Q-data, then correlates each Q-sort with every

[1] While there are other statistical analysis software packages which could be used for Q-analysis (e.g. SPSS), the spreadsheets associated with these packages tend to operate using R-methodology factor analyses and hence necessitate transposing them to run Q-analyses to ensure the computer will recognise the items as your sample and the participants as your variable (Watts & Stenner, 2012).

other Q-sort. Centroid factor analysis was performed, and the results then rotated to a simpler structure using varimax rotation (Barry & Proop, 1999). Those factors which were identified as being significant were extracted and thereafter represented 'best estimates' of the Q-sorts upon which each factor was based. The discourses associated with these factors were interpreted and form the basis of this chapter discussion.

Step	*Purpose*	*Analysis procedure*
1. Calculate the Correlation Matrix for all Q-sorts	To establish the degree of (dis)agreement/(dis)similarity between individual sorts, expressed as a correlation coefficient,	*Input data for all individual sorts into software and request correlation matrix*
2. Perform Factor Analysis on the Correlation Matrix	To search for shared patterns of similarity in the Q-sort configurations and to extract these portions of common variance (factors), thereafter determining a factor loading for each sort which expresses the extent to which each sort is associated with each factor,	*Command a Centroid Factor Analysis*
3. Perform a Factor Rotation on the original set of factors (in this instance an orthogonal rotation)	To allow the factor loadings to take on spatial/geometric functions which are essentially used as co-ordinates to map relativist positions and arrive at a final set of factors	*Command a varimax rotation of the factors*
4. Prepare the factor arrays/estimates	To identify those Q-sorts which statistically load on each factor and should therefore be used in establishing each factor's viewpoint,	*Calculate a significant factor loading and apply*
5. Interpret results		

Table 8.2*: Overview of analytic procedure employed.*

Through factor analysis, themes and patterns across the data were exposed. On the basis of statistical similarities and dissimilarities, distinct portions of common variance in the correlation matrix were removed to reveal shared and divergent perspectives (Watts &

Stenner, 2012). PQ method outputs a number of reports which are central to the subsequent factor interpretation:

- *Correlation matrix*
- *Un-rotated factor matrix*
- *Cumulative communalities matrix*
- *Rotated factor matrix*
- *Normalised factor scores*
- *Factor arrays*
- *Correlations between factor scores*
- *Distinguishing statements for each factor*
- *Consensus statements*

Because factor analyses have a "potentially infinite number of acceptable solutions" the most appropriate analytic options vary from Q-study to Q-study. The following results section therefore explains the reasoning behind a number of critical decisions in this Q-study (Watts & Stenner, 2012:92).

8.3 Results

8.3.1 The correlation matrix

As a first indication of the degree of commonality between visions for Scotland's wildland, the correlation matrix below (Table 8.3) represents the extent, and nature, of the relationship between each and every Q-sort (i.e. each and every estate) in this study. The correlations are scored on a scale of +1 to -1, where zero indicates no correlation between individual sorts and high numbers indicate similarity in perspective. This correlation matrix therefore encapsulates the range of variance in this study in its entirety. While these correlations are characterised by significant diversity, the absence of values in the 80s and 90s implies a lack of driving consensus in conceptualising the future of Scotland's wildland, thereby supporting the results of Chapter 6. In fact, the negative correlations represent statistically negative – and therefore often contradictory – aspirations for Scotland's landscapes of wild character.

	CO3	***P2***	***T2***	***CO1***	***P7***	***CO4***	***CO5***	***T3***	***P6***	***T1***	***P1***	***CO7***	***CO6***	***CO2***	***P3***	***P5***	***P4***
CO3	***100***	*-30*	*50*	*54*	*15*	*39*	*59*	*-6*	*37*	*54*	*37*	*61*	*32*	*44*	*26*	*-9*	*39*
P2	*-30*	***100***	*17*	*-30*	*26*	*-15*	*-24*	*8*	*-11*	*-30*	*-20*	*-12*	*6*	*-24*	*-14*	*30*	*-11*
T2	*50*	*17*	***100***	*16*	*56*	*10*	*21*	*34*	*35*	*21*	*19*	*43*	*55*	*10*	*31*	*34*	*21*
CO1	*54*	*-30*	*16*	***100***	*15*	*9*	*52*	*-24*	*30*	*50*	*29*	*54*	*17*	*65*	*-8*	*-20*	*29*
P7	*15*	*26*	*56*	*15*	***100***	*1*	*20*	*21*	*40*	*8*	*41*	*28*	*36*	*-5*	*5*	*45*	*45*
CO4	*39*	*-15*	*10*	*9*	*1*	***100***	*34*	*24*	*5*	*0*	*41*	*10*	*-6*	*16*	*31*	*-15*	*10*
CO5	*59*	*-24*	*21*	*52*	*20*	*34*	***100***	*-14*	*29*	*52*	*57*	*50*	*34*	*73*	*12*	*-21*	*52*
T3	*-6*	*8*	*34*	*-24*	*21*	*24*	*-14*	***100***	*21*	*-15*	*20*	*0*	*22*	*-19*	*51*	*31*	*-8*
P6	*37*	*-11*	*35*	*30*	*40*	*5*	*29*	*21*	***100***	*12*	*36*	*46*	*43*	*24*	*36*	*32*	*44*
T1	*54*	*-30*	*21*	*50*	*8*	*0*	*52*	*-15*	*12*	***100***	*30*	*59*	*15*	*60*	*-5*	*-30*	*35*
P1	*37*	*-20*	*19*	*29*	*41*	*41*	*57*	*20*	*36*	*30*	***100***	*20*	*20*	*30*	*36*	*10*	*41*
CO7	*61*	*-12*	*43*	*54*	*28*	*10*	*50*	*0*	*46*	*59*	*20*	***100***	*41*	*57*	*-3*	*-14*	*60*
CO6	*32*	*6*	*55*	*17*	*36*	*-6*	*34*	*22*	*43*	*15*	*20*	*41*	***100***	*21*	*24*	*15*	*20*
CO2	*44*	*-24*	*10*	*65*	*-5*	*16*	*73*	*-19*	*24*	*60*	*30*	*57*	*21*	***100***	*9*	*-43*	*36*
P3	*26*	*-14*	*31*	*-8*	*5*	*31*	*12*	*51*	*36*	*-5*	*36*	*-3*	*24*	*9*	***100***	*29*	*16*
P5	*-9*	*30*	*34*	*-20*	*45*	*-15*	*-21*	*31*	*32*	*-30*	*10*	*-14*	*15*	*-43*	*29*	***100***	*-9*
P4	*39*	*-11*	*21*	*29*	*45*	*10*	*52*	*-8*	*44*	*35*	*41*	*60*	*20*	*36*	*16*	*-9*	***100***

Table 8.3*: Correlation matrix indicating the degree of similarity or dissimilarity between any two estates' visions for wildland.*

8.3.2 Extracting factors

Centroid Factor Analysis sought patterns within this matrix, the results of which are shown in the unrotated factor matrix in Appendix IX. While PCA (Principal Components Analysis) is arguably more statistically robust than Centroid Factor Analysis, the former culminates in a mathematically *best* solution without allowing any opportunity for exploring the data judgementally and theoretically through subsequent factor rotation. The latter "enables us to defer a decision about the best solution and the best criteria for making that solution until we have explored the data further" (Watts & Stenner, 2012:99). Extracting the appropriate number of factors (i.e. the number of patterns of shared meaning appropriate to describe the variability between sorts) is a question of interpretation (Watts & Stenner, 2012). In this instance, a three factor solution was deemed appropriate as it explains the maximum amount of variance on the fewest number of factors reasonable (Coogan & Herrington, 2011). A good solution should maximise the number of sorts which load significantly on one, and only one, of the factors, thereby minimising the number of confounded (loading significantly on more than one) or non-significant Q-sorts (Brown, 1993; Coogan & Herrington, 2011). The Kaiser-Guttman criterion of only extracting factors with eigenvalues of 1.00 or above was also employed as only eigenvalues above this value are understood to contribute significantly to the total variance within the correlation matrix (see Appendix X) (Watts & Stenner, 2012; Stenner, 2012, *personal comm.*).

A Varimax Rotation was performed on this three factor solution, the loading results of which are presented below (Table 8.4). Rotating the factors brings a new viewpoint into focus, thereby maximising the amount of variance accounted for by the individual factors as a simpler structure is adopted.[2] The vantage point provided by this re-positioning means Q-sorts are more likely to load strongly on one particular factor (Watts & Stenner, 2012). Expressed as correlation coefficients, the rotated factor matrix illustrates the extent to which each Q-sort is representative of each factor pattern.

[2] Rotating the factors essentially 'stretches the scale'. If a vertical axis from a 3-d perspective is viewed from an oblique angle the full extent of its height is obscured. By changing the angle a better understanding of the height of the vertical axis is gained. Rotating the factors increases and enhances the contrast between the factors, therefore.

	Q-sorts	*Factor 1*	*Factor 2*	*Factor 3*	*Commonal -ity (%)*
1.	*CO3*	0.702**X** (0.493)	0.268 (0.072)	0.292 (0.085)	65
2.	*P2*	-0.330 (0.109)	0.257 (0.066)	-0.225 (-0.051)	23
3.	*T2*	0.16 0 (0.026)	0.689**X** (0.461)	0.154 (0.024)	51
4.	*CO1*	0.708**X** (0.501)	0.106 (0.011)	-0.045 (-0.002)	51
5.	*P7*	0.067 (0.005)	0.714**X** (0.510)	-0.052 (-0.003)	52
6.	*CO4*	0.101 (0.01)	-0.125 (-0.016)	0.670**X** (0.449)	47
7.	*CO5*	0.762**X** (0.581)	0.172 (0.03)	0.234 (0.055)	67
8.	*T3*	-0.326 (-0.106)	0.369 (0.136)	0.384 (0.147)	39
9.	*P6*	0.285 (0.081)	0.603**X** (0.364)	0.209 (0.044)	49
10.	*T1*	0.703**X** (0.494)	0.033 (0.001)	-0.010 (0.000)	50
11.	*P1*	0.384 (0.147)	0.272 (0.074)	0.530**X** (0.281)	50
12.	*CO7*	0.752**X** (0.566)	0.439 (0.193)	-0.150 (-0.023)	78
13.	*CO6*	0.193 (0.037)	0.557**X** (0.310)	0.091 (0.008)	36
14.	*CO2*	0.780**X** (0.608)	-0.034 (-0.001)	0.048 (0.002)	61
15.	*P3*	-0.049 (-0.002)	0.272 (0.074)	0.613**X** (0.376)	45
16.	*P5*	-0.517 (0.267)	0.573 (0.328)	0.038 (0.001)	60
17.	*P4*	0.486**X** (0.236)	0.342 (0.117)	0.125 (0.016)	37
	Eigenvalue	*4.25*	*2.72*	*1.53*	
	Variance (%)	*25*	*16*	*9*	

Table 8.4: *Rotated factor matrix illustrating the degree to which each rotated factor estimate is indicative of each estate's (re)wilding discourse. Statistically significant sorts are marked X. These correlation co-efficients can be both positive and negative, indicating that a Q-sort can be negatively associated with a factor.*

Only 'defining sorts' (i.e. those with statistically significant loadings on one factor) were used to formulate the factor estimates (i.e. the estimated 'viewpoint' for each factor (see Appendix XI)). In this Q-study a defining sort required a loading of greater than 0.46 ($p < 0.01$) because only above this point were Q-sorts understood to closely exemplify the viewpoint of that factor.[3] As illustrated below, fourteen exemplars load significantly on three factors in this study. Consequently, P5, P2 and T3 were not used in the construction of the factor estimates.

[3] The threshold of 0.46 is used throughout the literature to define a 'defining sort' (Watts & Stenner, 2012) and represents the lowest loading that a sort can have before it is considered to not have enough similarity with the factor pattern to be considered a defining factor.

Factor Number	*Q-sorts (and the estates they represent)*	*Total*	*Cumulative Total*
1	*1 (CO3), 4 (CO1), 7 (CO5), 10 (T1), 12 (CO7), 14 (CO2), 17 (P4)*	*7*	*7*
2	*3 (T2), 5 (P7), 9 (P6), 13 (CO6)*	*4*	*11*
3	*6 (CO4), 11 (P1), 15 (P3)*	*3*	*14*
Confounded	*16 (P5)*	*1*	*15*
Non-Significant	*2 (P2), 8 (T3)*	*2*	*17*

Table 8.5*: Illustrating factor-defining Q-sorts. This table therefore represents a 'solution' which accounts for 14 of the 17 sorts (the sum of those attributed to one factor).*

8.3.3 Normalised factor scores

With the defining Q-sorts for each factor flagged the normalised factor scores (Z values) were calculated, providing the first glimpse of the viewpoint associated with each factor.[4] The Z score for each statement on each factor represents the distance between each statement's absolute value on each Q-sort and the overall mean, expressed through standard deviations. As the Z values are ranked from highest to lowest in Tables 8.6-8.8 for each factor they represent those statements of greatest and least significance for each factor. Using these values, therefore, one can begin to establish the character and distinctiveness of each factor. Colour-coding the nature of these statements allows natural groupings within each profile to be readily identified. However, while this is a useful tool for interpretation, caution must be employed when interpreting the significance of colour-coding as many statements could comfortably belong to more than one group. Such groupings are therefore merely indicative. Four meta-themes, identified during Round 1 Delphi discussions, provided the framework for establishing a well-balanced Q-set and are used here; 1) ecological, 2) landscape, 3) cultural/socio-economic, 4) philosophical.

[4] The initial factor estimate scores are not directly comparable across factors because they are each based on a varying number of Q sorts. To allow cross-factor comparisons these weighted scores must be standardised and are therefore converted into Z scores.

Factor 1 (F1)		
No.	*Statement*	*Z Score*
4	*Promoting natural processes*	1.517
5	*Retaining or enhancing biodiversity*	1.429
2	*Restoration of native woodland through natural regeneration*	1.404
32	*The intrinsic value of nature*	1.393
7	*Establishing ecological connectivity with surrounding land*	1.304
11	*Enhancing the sense of wildness from an experiential perspective*	1.079
28	*Enhancing the quality of naturalness*	0.843
9	*Ensuring ecosystems are adaptable in the face of climate change*	0.694
27	*Promoting people to foster more pro environmental behaviour*	0.658
3	*Restoration of native woodland through planting*	0.633
13	*Ensuring visual intrusions are minimal*	0.551
1	*Reintroduction of extirpated species*	0.412
10	*Maintaining high profile species & habitat in fav. condition*	0.395
12	*Removing human artefacts*	0.388
6	*Eradicating non-native species*	0.325
26	*Environmental education*	0.211
25	*A sustainable future*	0.184
31	*Managing for nativeness*	0.002
21	*Managing for ecosystem services*	-0.027
29	*An authentic landscape*	-0.356
22	*Employing pragmatism in management*	-0.521
15	*Providing a sense of adventure for recreationalists*	-0.714
8	*Using paleoecological indicators in future management*	-0.721
16	*Providing and managing infrastructure for visitor management*	-0.757
19	*Protecting the cultural heritage of the landscape*	-0.772
14	*Promoting a picturesque quality in the landscape*	-0.902
23	*Promoting ecotourism and encouraging visitors*	-0.909
24	*Integrated land uses*	-1.091
30	*Historical accuracy in landscape character*	-1.284
17	*Supporting traditional land management practices such as crofting*	-1.431
18	*Providing sporting opportunities*	-1.936
20	*Ensuring the land is productive*	-2.005

Key
Ecological
Landscape
Cultural/socio-economic
Philosophical

Table 8.6*: Normalised factor scores for factor 1. It is important to note that a negative score does not necessarily mean that those statements are insignificant or necessarily from this vision. Negative values simply mean that those statements contribute less to the vision than statements with positive values.*

Factor 2 (F2)		
No.	*Statement*	*Z Score*
25	*A sustainable future*	1.525
2	*Restoration of native woodland through natural regeneration*	1.505
7	*Establishing ecological connectivity with surrounding land*	1.405
3	*Restoration of native woodland through planting*	1.326
5	*Retaining or enhancing biodiversity*	1.180
10	*Maintaining high profile species & habitat in fav.condition*	0.950
9	*Ensuring ecosystems are adaptable to climate change*	0.892
24	*Integrated land uses*	0.805
31	*Managing for nativeness*	0.723
4	*Promoting natural processes*	0.690
32	*The intrinsic value of nature*	0.526
22	*Employing pragmatism in management*	0.353
26	*Environmental education*	0.337
21	*Managing for ecosystem services*	0.327
17	*Supporting traditional land management practices, e.g.crofting*	0.123
20	*Ensuring the land is productive*	0.028
11	*Enhancing the sense of wildness from an experiential perspective*	0.000
27	*Promoting people to foster more pro-environmental behaviour*	-0.061
14	*Promoting a picturesque quality in the landscape*	-0.171
6	*Eradicating non-native species*	-0.184
18	*Providing sporting opportunities*	-0.191
19	*Protecting the cultural heritage of the landscape*	-0.263
23	*Promoting ecotourism and encouraging visitors*	-0.569
13	*Ensuring visual intrusions are minimal*	-0.575
28	*Enhancing the quality of naturalness*	-0.662
16	*Providing and managing infrastructure for visitor management*	-0.751
8	*Using paleoecological indicators in future management*	-0.874
15	*Providing a sense of adventure for recreationalists*	-1.035
1	*Reintroduction of extirpated species*	-1.696
29	*An authentic landscape*	-1.704
30	*Historical accuracy in landscape character*	-1.878
12	*Removing human artefacts*	-2.080

Factor 3 (F3)		
No.	*Statement*	*Z Score*
19	*Protecting the cultural heritage of the landscape*	1.702
2	*Restoration of native woodland through natural regeneration*	1.700
5	*Retaining or enhancing biodiversity*	1.501
10	*Maintaining high profile species and habitat in favourable c*	1.362
25	*A sustainable future*	1.230
29	*An authentic landscape*	1.084
28	*Enhancing the quality of naturalness*	0.678
4	*Promoting natural processes*	0.617
26	*Environmental education*	0.612
31	*Managing for nativeness*	0.544
13	*Ensuring visual intrusions are minimal*	0.413
7	*Establishing ecological connectivity with surrounding land*	0.340
27	*Promoting people to foster more pro-environmental behaviour*	0.273
22	*Employing pragmatism in management*	0.271
6	*Eradicating non-native species*	0.207
16	*Providing and managing infrastructure for visitor management*	0.199
11	*Enhancing the sense of wildness from an experiential perspective*	0.066
18	*Providing sporting opportunities*	0.006
30	*Historical accuracy in landscape character*	0.000
21	*Managing for ecosystem services*	-0.067
32	*The intrinsic value of nature*	-0.340
8	*Using paleoecological indicators in future management*	-0.413
14	*Promoting a picturesque quality in the landscape*	-0.544
17	*Supporting traditional land management practices, e.g.crofting*	-0.750
23	*Promoting ecotourism and encouraging visitors*	-0.819
20	*Ensuring the land is productive*	-0.955
12	*Removing human artefacts*	-1.090
24	*Integrated land uses*	-1.294
9	*Ensuring ecosystems are adaptable to climate change*	-1.362
1	*Reintroduction of extirpated species*	-1.635
15	*Providing a sense of adventure for recreationalists*	-1.700
3	*Restoration of native woodland through planting*	-1.835

***Tables 8.7 and 8.8**: Normalised factor scores for factors 2 & 3.*

Some defining characteristics are instantly discernible, for instance the significance of ecological aspirations for wildland across all three factors supports Chapter 5's assertion that wildland is evolving beyond its initial landscape-only framing. While there is similarity between factors, the significance of different themes is distinct. Ecological statements dominate the upper ranges of F1 while the cultural/socio-economic theme is far less salient. Contrastingly, this theme is far more dominant in F2 and F3. The landscape emphasis is largely constrained to the lower quartile in F2, making way for a top heavy ecological emphasis, while it remains more integrated in F1 and F3. The four themes appear more interspersed throughout the entire range of F3 than they do in F1 and F2.

8.3.4 Consensus and Contention: the complementarity of visions

While these Z scores are enlightening, the individual scores for each statement must be converted into one single factor array to understand the actual nature of each factor. Factor arrays represent an estimate of a model Q-sort if an estate had a 100% loading on that factor (Coogan & Herrington, 2011). Using these arrays, therefore, 'difference scores' can be calculated to provide an indication of those statements which are ranked significantly differently between factors, and those which are not (Watts & Stenner, 2012). This estimate of each factor is presented in Table 8.9 where the shaded statements illustrate statistically significant areas of consensus between the factors.

Again, these estimated viewpoints reaffirm the results of Chapter 6; while there is little consistent strategic direction in the management of Scotland's wild landscapes, retaining and enhancing biodiversity - in part by increasing woodland cover through natural regeneration - is ubiquitously supported. There is general consensus that 'reviving' the land should not be retrospective, and that promoting a picturesque quality is somewhat irrelevant. While it might be tempting to assume that this is because landscape quality more generally is viewed as inferior to ecological aspirations, the ranking of other landscape statements (e.g. no.12) suggest this is not the case. While 'picturesque' may not be regarded as accordant with wildness (Habron, 1998a), other landscape qualities, such as the absence of human artefacts, are regarded as significant in some instances.

All factors rank the eradication of non-native species at zero. While this might imply they are viewed as non-detrimental to wild landscapes, the logic of abduction (Appendix X) counsels against such unquestioning assumptions in Q-methodology

(Brown & Robyn, 2004). In reality the neutral positioning of this statement is due to pragmatic recognition of the futility of fighting the presence of some non-natives *(i)*. The value of post-sorting reflection with each respondent is especially clear in this instance; rationalising sorting decisions is a critical component of Q-methodology, and on this issue revealed a decision based on practical reality, as opposed to an ideological value.

(i) *"[…] because it is so difficult to properly eradicate so many of these types of species [non-natives], if they're not doing much damage there might be an argument for not doing anything at all" (P1)*

Factor Arrays				
Statements	***Factor 1***	***Factor 2***	***Factor 3***	***Difference between highest & lowest ranking***
1. Reintroduction of extirpated species	*+1*	*-2*	*-2*	*3*
2. Restoration of native woodland through natural regeneration *	*+2 (1.40)*	*+3 (1.50)*	*+3 (1.70)*	*1*
3. Restoration of native woodland through planting	*+1*	*+2*	*-3*	*5*
4. Promoting natural processes	*+3*	*+1*	*+1*	*2*
5. Retaining or enhancing biodiversity *	*+3 (1.43)*	*+2 (1.18)*	*+2 (1.50)*	*1*
6. Eradicating non-native species *	*0 (0.32)*	*0 (0.18)*	*0 (0.21)*	*0*
7. Establishing ecological connectivity with surrounding land	*+2*	*+2*	*+1*	*1*
8. Using paleoecological indicators such as pollen profiles in future management *	*-1 (-0.72)*	*-2 (-0.87)*	*-1 (0.41)*	*1*
9. Ensuring ecosystems are adaptable in the face of climate change	*+1*	*+1*	*-2*	*3*
10. Maintaining high profile species and habitat in favourable condition	*0*	*+2*	*+2*	*2*
11. Enhancing the sense of wildness from an experiential perspective	*+2*	*0*	*0*	*2*
12. Removing human artefacts	*0*	*-3*	*-2*	*3*
13. Ensuring visual intrusions are minimal	*+1*	*-1*	*+1*	*2*
14. Promoting a picturesque quality in the landscape	*-1 (0.90)*	*0 (-0.17)*	*-1 (-0.54)*	*1*
15. Providing a sense of adventure for recreationalists	*-1*	*-2*	*-3*	*2*
16. Providing and managing infrastructure for visitor management, i.e. paths	*-1*	*-1*	*0*	*1*
17. Supporting traditional land management practices such as crofting	*-2*	*0*	*-1*	*2*
18. Providing sporting opportunities, i.e. stalking, grouse shooting	*-3*	*-1*	*0*	*3*
19. Protecting the cultural heritage of the landscape	*-1*	*-1*	*+3*	*4*
20. Ensuring the land is productive	*-3*	*0*	*-1*	*3*
21. Managing for ecosystem services *	*0 (-0.03)*	*0 (0.33)*	*0 (-0.07)*	*0*
22. Employing pragmatism in management	*-1*	*+1*	*0*	*2*
23. Promoting ecotourism and encouraging visitors *	*-2 (-0.91)*	*-1 (-0.57)*	*-1 (-0.82)*	*1*
24. Integrated land uses	*-2*	*+1*	*-2*	*3*
25. A sustainable future	*0*	*+3*	*+2*	*3*
26. Environmental education *	*0 (0.21)*	*0 (0.34)*	*+1 (0.61)*	*1*
27. Promoting people to foster more pro-environmental behaviour	*+1 (0.66)*	*0 (-0.06)*	*0 (0.27)*	*1*
28. Enhancing the quality of 'naturalness'	*+1*	*-1*	*+1*	*2*
29. An 'authentic' landscape	*0*	*-2*	*+2*	*4*
30. Historical accuracy in landscape character,	*-2*	*-3*	*0*	*3*
31. Managing for 'nativeness'	*0 (0.00)*	*+1 (0.72)*	*+1 (0.54)*	*1*
32. The intrinsic value of nature	*+2*	*+1*	*-1*	*3*

Table 8.9*: The factor array for each factor. Those statements highlighted red represent items with the greatest variance in ranking position between each factor. They therefore represent the areas of greatest disparity in the overall vision. Those statements highlighted grey represent statements where there was the greatest amount of consensus, meaning they are not distinguishable between any pair of factors. Those grey statements which are asterixed are non-significant (as in non-distinguishable) at p>0.01, and those not asterisked at p>0.5.*

Tables 8.10-8.12 attribute these distinguishing statements to the factors (F1-F3) upon which they are distinguishable. These statements therefore represent specific, and diagnostic, values associated with these factors. Table 8.10 therefore illustrates that those items which are more inherently associated with experiential wildness (i.e. items 11 and 12) are generally ranked higher in F1, while those items concerning the economic and social sustainability of the landscape are ranked lower (18, 20).

	Distinguishing Statements for Factor 1	***Factor 1***	***Factor 2***	***Factor 3***
4.	*Promoting natural processes*	1.52 (3)	0.69 (1)	0.62 (1)
32.	*The intrinsic value of nature*	1.39 (2)	0.53 (1)	-0.34 (-1)
11.	*Enhancing the experiential sense of wildness*	1.08 (2)	0.00 (0)	0.07 (0)
1.	*Reintroduction of extirpated species*	0.41 (1)	-1.70 (-2)	-1.63 (-2)
12.	*Removing human artefacts*	0.39 (0)	-2.08 (-3)	-1.09 (-2)
25.	*A sustainable future*	0.18 (0)	1.53 (3)	1.23 (2)
29.	*An authentic landscape*	-0.36 (0)	-1.70 (-2)	1.08 (2)
18.	*Providing sporting opportunities*	-1.94 (-3)	-0.19 (-1)	0.01 (0)
20.	*Ensuring the land is productive*	-2.00 (-3)	0.03 (0)	-0.96 (-1)

Table 8.10*: Distinguishing statements for F1. Only those significant to p < 0.1 have been included.*

In contrast F2 demonstrates statistically more concern with items linked to sustainable rural economies (24, 20), and significantly less concern for landscape attributes and experiential wildness (12, 13).

	Distinguishing Statements for Factor 2	***Factor 1***	***Factor 2***	***Factor 3***
24.	*Integrated land uses*	-1.09 (-2)	0.80 (1)	-1.29 (-2)
20.	*Ensuring the land is productive*	-2.00 (-3)	0.03 (0)	-0.96 (-1)
13.	*Ensuring visual intrusions are minimal*	0.55 (1)	-0.58 (-1)	0.41 (1)
28.	*Enhancing the quality of naturalness*	0.84 (1)	-0.66 (-1)	0.68 (1)
29.	*An authentic landscape*	-0.36 (0)	-1.70 (-2)	1.08 (2)
12	*Removing human artefacts*	0.39 (0)	-2.08 (-3)	-1.09 (-2)

Table 8.11*: Distinguishing statements for F2. Only those significant to p < 0.1 have been included.*

F3 is distinguishable on account of its concern for authenticity and historical continuity in upland landscapes. F3 embraces the history of wildland, while F1 is more likely to deny it.

	Distinguishing Statements for Factor 3	***Factor 1***	***Factor 2***	***Factor 3***
19.	*Protecting the cultural heritage of the landscape*	-0.77 (-1)	-0.26 (-1)	1.70 (3)
29.	*An authentic landscape*	-0.36 (0)	-1.70 (-2)	1.08 (2)
7.	*Establishing ecological connectivity with surrounding land*	1.30 (2)	1.41 (2)	0.34 (1)
30.	*Historical accuracy in landscape character*	-1.28 (-2)	-1.88 (-3)	0.00 (0)
20.	*Ensuring the land is productive*	-2.00 (-3)	0.03 (0)	-0.96 (-1)
12.	*Removing human artefacts*	0.39 (0)	-2.08 (-3)	-1.09 (-2)
9.	*Ensuring ecosystems are adaptable in the face of climate change*	0.69 (1)	0.89 (1)	-1.36 (-2)
3.	*Restoration of native woodland through planting*	0.63 (1)	1.33 (2)	-1.84 (-3)

Table 8.12*: Distinguishing statements for F3. Only those significant to $p < 0.1$ have been included.*

8.4 Interpretation: taxonomy themes

In Chapter 4, Q-methodology is described as an integrated quantitative and qualitative method; given the degree of subjectivity associated with interpreting Q-data, each Q-sort should be contextualised with subsidiary qualitative data derived from post-sorting reflection (Urquhart, 2008). The following discussion examines the above results in conjunction with direct quotations from these supporting discussions, to provide holistic interpretation of the character of each profile. A framework of taxonomic themes, detailed in Table 8.13, provides an infrastructure for this. As meaning is constructed through these taxonomic themes the viewpoint of each factor begins to crystallise. From this point on, therefore, it is necessary to move beyond thinking in terms of 'factors', and to begin to conceptualise these three discourses as viewpoints associated with three different profiles of management.

Taxonomy themes and affiliated statements
Concern for ecological integrity (5,6,10)
Performing ecological restoration (1,2,3)
Concern for ecological functionality & resilience (4,7,9)
Concern for wildness as an experiential, landscape quality (11,12,13,14)
Concern for wildness as a recreational quality (15,16,23)
Concerned with historical fidelity (8,30)
Concern for ensuring a sustainable future and economic viability of landscapes (20,21,22,24,25)
Concern for preserving cultural heritage and traditional value (17,18,19)
Concerned with reconnecting people with nature (26,27)
Motivated by philosophical considerations (28,29,31,32)

Table 8.13*: Taxonomic themes identified within the four broad meta-themes for a well-balanced Q-set above (Tables 8.6-8.8). All statements in the Q-set were grouped into sub-headings to allow for detailed analysis of how different themes relate to different factors. The numbers bracketed after each theme represent the individual Q-statements in the Q-set and how they are broadly characterised as belonging to each theme.*

8.4.1 Ecological parameters

While the ecology of wildland is significant to all profiles, teasing apart this broad theme reveals some subtle diversity. Although 'ecological integrity' and 'ecological resilience' are in many respects analogous (Miller & Ehnes, 2000), the distinction between them is significant. Ensuring ecological functionality and resilience is a key aspiration associated with Profile 1 (Pf.1) (*4=1.517*). While this is important to Profile 2 (Pf.2) ecological integrity is of greater significance (*2=1.505*) *(i)*. Accordingly, Pf.2 also places a significant degree of emphasis on ecological restoration as an interventionist approach to regain ecological integrity, as is implied by the emphasis on the value of nativity in management (*31=0.723*). With less emphasis on ecological integrity, Pf.1 is also less concerned with managing for nativity (*31=0.002*). Consequently, ecological restoration through highly interventionist practices is less prominent in a Pf.1 perspective (e.g. planting trees, although this practice is by no means the lowest ranking statement for Pf.1) where restoring natural processes is paramount (*4=1.517*) *(ii)*. Arguably, Pf2 is more concerned with the conservation of species composition (*10=0.950*), while Pf.1 places more emphasis on processes (*10=0.395*).

(i) *"[…] allow the land to achieve its full ecological potential – making it as ecological productive as possible" (P7, Pf.2 estate*

(ii) *"[…] moving from human domination of ecosystems to one in which natural processes prevail" (CO7, Pf.1 estate)*

While Pf.3 is less weighted by broad ecological aspiration, it places the greatest amount of emphasis on ecological integrity of all three profiles (*5=1.501*). With a concomitant lack of emphasis on ecological resilience and restorative practices, Pf.3 arguably holds a more traditional view of conservation (*9= -1.362*) *(i)*.

(i) *[maintaining a species specific emphasis] "We do and will continue to do a lot of specific management for mountain ringlet, because that's a key species" (CO4, Pf.3 estate)*

8.4.2 Historical fidelity

In light of this distinction between ecological integrity and ecological resilience, the degree of concern for historical fidelity is an interesting avenue of exploration. For Pf.1, with its 'processes' rather than 'composition' focus, historical fidelity is confined predominantly to the lower quartile (*30=-1.284*). Pf.1 demonstrates a lack of concern for 'endpoints' in an effort to incorporate the dynamicism of nature into nature conservation (*8= 0.721*) *(i)*. Guided by a vision of shifting mosaic habitats in which there is no static endpoint, notions of historical fidelity are irrelevant, if not incompatible *(ii)*.

(i) *"[...] there is no static end point to aim for" (CO7, Pf.1 estate)*
(ii) *"[...] people are quite keen to know what they are thinking of, and I think that's important, but what they get might not be what they thought" (P4, Pf.1 estate)*

Intriguingly, despite the emphasis on ecological integrity and restoration – which implies historic continuity - historical fidelity was ranked lower by Pf.2 than any other profile (*8= -0.874; 30= -1.878*). The significance of this is encapsulated in the 'preservation versus conservation' debate (Warren, 2009a); despite this concern for integrity, Pf.2 estates recognise that nature is dynamic *(i)*. Integrity is therefore manifested as future continuity, rather than a romantic restoration driven by nostalgia *(ii)*.

(i) *"[...] should we try to keep what wildland we have in stasis, or facilitate natural/ecological developments and processes? I would argue the latter" (T2, Pf.2 estate)*
(ii) *"[...] we're concerned with going forwards rather than backwards" (P7, Pf.2 estate)*

While historical fidelity remains confined to the lower ranges, it is ranked highest in Pf.3 (*30=0.000*). The significance of this will emerge during further discussion of other taxonomy themes which consistently imply that landscape authenticity is paramount to this Profile.

8.4.3 The place of cultural heritage and valuing 'tradition'

The value of cultural heritage in wildland is of greatest significance to Pf.3, where cultural heritage statements are more evenly distributed among the natural heritage statements than in Pf.1 and Pf.2 (29=1.084). Pf.3 estates generally consider managing wildland without concern for cultural heritage to be a re-enactment of the Highland Clearances *(i).*

> *(i) "[ignoring the cultural heritage] is not something which sits comfortably with somebody who has a Highland history" (P3, Pf.3 estate)*

To a lesser extent, Pf.2 also acknowledges the value that the cultural history of the Highlands can contribute to wildland quality (*17=0.123*) *(i).*

> *(i) "Wildland should never mean the exclusion of people, especially in a landscape with such a rich cultural history" (T2, Pf.2 estate)*

However, while Pf.3 values cultural heritage and traditional land uses for their contribution to the authenticity, and 'wildness', of wildland *(i),* Pf.2 are more likely to accept them as part of their pragmatic vision for integrated land use (*24=0.805*) *(ii).*

> *(i) "[…] people like to see these historical features. There is something wild about them and the way they help people connect with the sense of deep, ancient history here" (CO4, Pf.3 estate)*
> *(ii) "Restorations should certainly be compatible with forms of traditional management. In fact, it could make it more viable [...] for instance, increased use of coppicing in native woodlands" (T2, Pf.2 estate)*

In fact, the post-sorting reflection suggests that 'supporting traditional land management practices' was ranked higher in Pf.2 than other profiles for practical, utilitarian reasons, in that such practices are understood to contribute to the delivery of their ecological aspirations for wildland in some instances *(i),* and to the overall sustainability of the estate *(ii).*

(i) *"[...] crofting can have some quite extensive benefits for lapwings in terms of having areas of shorter grass after grazing" (P7, Pf.2 estate*
(ii) *"Cultural heritage can be a lever for funding" (CO6, Pf.2 estate)*

For some Pf.2 estates the positioning of these cultural components in the middle ground was simply due to relative indifference towards their presence in landscapes of wild character *(i)*.

(i) *"[....] history is made every day [...] so we don't want to destroy it, but we don't want to preserve it either" (P7, Pf.2 estate)*

In contrast, Pf.1's cultural heritage scores suggest a more purist conception of wildland, where wild quality can be compromised by the presence of human influence (*17= -1.431; 18= -1.936*) *(i)*. The cultural landscape is less worthy in Pf.1's future aspirations than Pf.2's and Pf.3's *(ii)*.

(i) *"Wildland is devoid of human influence so how can we incorporate or preserve the cultural landscape?" (CO5, Pf.1 estate)*
(ii) *"[...] there is no place for crofting in wild landscapes – it complicates matters significantly and it's easier just not to have it" (P4, Pf.1 estate)*

8.4.4 Sustainability & a place for people

Because of the paramount importance of nature's intrinsic value to Pf.1 (*32=1.393*), the economic and social sustainability of wildland is not ranked highly (*20=-2.005; 24=-1.091*). Equally, the place of people in terms of recreation has little resonance (*16=-0.757; 23=-0.909*), although reconnecting people with the intrinsic value of nature for nature's sake gains greater credence (*26=0.211; 27=0.658*). Pf.1 estates are less concerned with finding a place for people in wildland than Pf.2 and Pf.3 estates *(i)*.

(i) *"[...] it doesn't need humans to go and experience it for it to be wild. [...] People can experience it but it's not a pre-requisite" (CO7, Pf.1 estate)*

Opposingly, Pf.2's wildland vision has sustainability at its core (*25=1.525*). While future sustainability is also important to Pf.3 (*25=1.230*), the relative significance of other taxonomy themes suggests that these profiles are driven by different motivations.

The precedence of ecological aspirations in Pf.2's upper range indicates the dominance of their ecological vision, with the economic and social as secondary *(i)*, while the economic sustainability of wildland is more central to Pf.3 than in any other profile *(ii)*.

(i) *"[...] wilderness and wildlife need economic drivers to push them up the agenda" (CO6, Pf.2 estate)*

(ii) *"[...] commercial forestry interests are very much [...] going to produce an economic surplus, and that allows management of other areas" (P1, Pf.3 estate)*

While Pf.1 is least concerned with ensuring the land is productive (*20=-2.005*), Pf.2 appears to work on the basic principle of "ecological capital and interest" whereby they "protect the capital and use the interest", (*P7*). The Pf.2 understanding of sustainability is evidently pyramidal (signpost), with ecological health at the very base *(i)*.

(i) *"We still want the land to be productive in the sense of employment and sporting interests […] but its ecology is at the core" (P7, Pf.2 estate)*

Ensuring a place for people in Scotland's wildland is central to Pf.2's vision (*17=0.123; 20:0.028*) *(i;ii)*.

(i) *"[...] we should be promoting public stewardship of wildland, not exclusion" (T2, Pf.2 estate)*

(ii) *"People need to realise and recognise that this can't be done without people" (P7, Pf.2 estate*)

While ensuring a sustainable future is important for Pf.3, the relative ranking of the other statements implies that this is in part a vision for sustaining traditional landscapes; sustaining the authenticity of the Highlands as opposed to forward-looking sustainability (*18=0.006; 29=1.084*) *(i)*.

(i) *"[...] maintaining lifestyle and maintaining land rights" (P3, Pf.3 estate)*

The place of people in terms of recreation in Scotland's wild landscapes was considered most significant by Pf.3 (*16=0.199*) *(i)*.

(i) *"Conservation has to be people oriented. There's no point in having it looking good if there's nobody there to see and enjoy it" (CO4, Pf.3 estate)*

8.4.5 Experiential wildness and landscape aesthetics

Ironically, despite Pf.3 placing greatest emphasis on the recreational capacities of wildland, wildness as an experiential quality is most significant to Pf.1 (*11=1.079*). This is largely manifested as a concern for landscape aesthetics *(i).* Therefore, while ecological functionality is imperative to Pf.1, a number of landscape statements also dominate its upper ranges (*32= 1.392; 11=1.079*). Pf.1's vision is more than simply an ecological aspiration *(ii).*

(i) *"[...] we have removed 27 miles, or 27 kilometres, of fencing, principally old deer fencing" (P4, Pf.1 estate)*

(ii) *"Hill tracks needs to be very high on Scotland's wildland agenda. They are one of the greatest threats to wildland quality" (CO5, Pf.1 estate)*

In Pf.2 the landscape emphasis is reduced dramatically (*13=-0.575; 14=-0.171*) and is coupled instead with the increasing significance of pragmatism in management (*22=0.353*). The more purist nature of Pf.1 contrasts with the pragmatism of Pf.2. The positioning of some experiential wildness statements in the middle range, coupled with supplementary interview data, implies that the Pf2 approach to landscape aesthetics is one of "careful planning" (*P6*). 'Enhancing experiential wildness' scored 0.000 on Pf2. While such a score is not necessarily indicative of indifference, in this instance it arguably does represent neutrality; rather than being pivotal to their aspirations, 'enhanced wildness' is viewed as a by-product of their ecological endeavour *(i).* Ecology, in terms of naturalness, is the driving force in Pf2.

(i) *"[...] a woodland planned on a landscape scale based on altitude, topography and aspect will, by its very nature, be visually appealing" (T2, Pf.2 estate)*

Furthermore, Pf.2's pragmatism in management, combined with the emphasis on integrated land-uses and sustainability, is arguably less compatible with landscape value than the purist ideologies of Pf.1 *(i).* Consequently, Pf.2 considers sensitive and "tasteful" *(P7)* human artefacts to be compatible with wildland *(ii).*

(i) *"Functional value needs to outweigh visual value to really make a difference" (P6, Pf.2 estate)*

(ii) *"[...] a croft or a shooting lodge isn't intrusive [...] quality habitat and quality architecture" (P7, Pf.2 estate)*

The primary purpose of this Q-study was to establish the parameters through which disparate (re)wilding approaches are justified. While taxonomic analysis of these three profiles provides the foundations of a taxonomy of (re)wilding applications, the logic of abduction asserts that Q-sorts must be analysed as gestalt entities because each sort takes on its meaning as a consequence of its place in the configuration of combined Q-sorts (McKeown & Thomas, 1988). To ensure robust and consistent translation of these factors into profiles, therefore, a 'crib sheet' approach was employed (Watts & Stenner, 2012). This simple approach is explained in Appendix XII where the crib sheet for each profile is provided. The results of this final analytic procedure are summarised below where a final factor interpretation for each profile is given. Collectively these three profiles formulate the taxonomy of current (re)wilding discourses in Scotland presented in Section 8.5.

8.5 A (re)wilding taxonomy

Profile 1: 'Wilderness enhancers': restoring the land

Explaining 25% of the study variance, and with an eigenvalue of 4.25, seven estates are significantly associated with Profile 1; CO3, CO1, CO5, T1, CO2, CO7, P4. These estates are predominantly under NGO ownership (n=5).

Key terms: natural processes, intrinsic value of nature, experiential quality of wildness

The guiding view of wildland is as an area of land where nature's autonomy is prevalent and where the full complement of native species is present. The intrinsic value of nature is an explicit, and distinguishing, virtue (*statement 32: value +2*). This philosophical motivation is translated into a management policy that is characterised by the promotion of natural processes and minimal intervention (4: +3). While pro-active restorative practices are considered, allowing nature to restore itself is the preferred option (2: +2; 3: +1). There is recognition that the potential for natural processes is truncated by the absence of keystone species, for instance, and therefore the reintroduction of extirpated species is generally supported (1: +1). The significance of a 'natural ecology' to the landscape is implicit in the emphasis placed on the ecological functionality (9: +1). The primacy of concern for ecological connectivity, coupled with a concern for the experiential quality of 'wildness', is quite consistent with archetypal conceptions of 'rewilding' (7: +2; 11: +2). The significance of wildness in a primeval landscape sense is evidenced by consideration of removing human artefacts which might compromise wild character (12: 0). Consequently, as an abatement of primitiveness, the cultural heritage of the uplands and associated traditional practices is sometimes considered to compromise this future vision of wildness for the uplands (18: -3; 19: -1). Equally, as a vision for creating space for nature to take precedence, promoting space for contemporary society to experience such landscapes through tourism and recreation is of less significance (16: -1; 23: -2). While environmental sustainability warrants concern, the socio-economic sustainability of such landscapes is not a key focus (20: -3).

Overarching viewpoint.....

"[...] letting nature decide what to do. In most cases this will take us to a state that existed before man started overexploiting the natural capital – so in many ways it will be going back to the future" (CO1)

***Box 8.1**: Full factor interpretation for Profile 1*

Profile 2: Semi-naturalness: restoring a natural ecology

Explaining 16% of the overall study variance, with an eigenvalue of 2.72, four estates are significantly associated with Profile 2; T2, P7, P6 and CO6. These estates are predominantly under private and community ownership (n=4)

Key terms: Restoration of native woodland, ecosystem resilience, sustainability

The guiding view of wildland is one of semi-natural habitats. The restoration of a natural ecology for the benefit of nature conservation is a driving management ethos, which is predominantly manifested as a concern for restoring native woodland (2: +3). Directive intervention is commonly employed to achieve this end (3: +2). Because the emphasis is on 'future-naturalness' and the adaptability of ecosystems in the face of climate change (9: +1), notions of recreating past landscapes and managing retrospectively are unsupported (29: -2; 30: -3). 'Wildness', as an experiential quality of landscape character does not resonate particularly highly (11: 0). Consequently, enhancing the primitive condition of wildness through the removal of human artefacts is of little interest (12: -3). While the environmental sustainability of the land is central, the absence of purist wilderness values allows for a more holistic understanding of sustainability, whereby people have a place in the future these landscapes (24: +1; 20: 0). The cultural heritage and traditional land uses associated with the uplands, therefore, appear to be neither detractors nor enhancers of this vision for environmental sustainability (17: 0; 18; -1; 19: -1).

Overarching viewpoint.....

"...we should not seek to hold anything in stasis, or even attempt to recreate past situations [...] Instead we should look at the positive aspects of our landscapes now, and seek to strengthen and enhance them for maximum ecological and social benefit" (T2)

Box 8.2: *Full factor interpretation for Profile 2.*

Box 8.3*: Full factor interpretation for Profile 1.*

Profile 3: Sustainable land management: restoring the uplands

Explaining 9% of the overall study variance, with an eigenvalue of 1.53, three estates are significantly associated with factor 3: CO4, P1 and P3. These estates are predominantly under private ownership (n = 2)

Key terms: Cultural heritage, sustainability, natural regeneration

The guiding view of wildland is one of historical continuity and authenticity (29: +2). Therefore, while there is an explicit concern for healthy ecosystems and restoring degraded ecologies (2: +3; 10: +2), there is an implicit imperative that the cultural and traditional heritage of these landscapes should not be compromised in achieving this (19: +3). Consequently, an underlying philosophical concern for the authenticity of landscapes, which necessitates celebrating traditional practices in some instances, is evidenced (18: 0). The cultural heritage is therefore quite evenly weighted against the natural heritage. Concern for future sustainability is apparent in the importance of environmental education (26: +1). However, despite quite a pragmatic perspective about low impact extractive practices and rural development, there is an underlying appreciation of the quality of wildness that such landscapes exhibit and the fact that management must, therefore, be sensitive to this (11: 0). Landscape authenticity and perceptual wildness are significant (13: +1); these values are not viewed as being compromised by the presence of all human artefacts (12: -2).

Overarching viewpoint

"[...] caring for what we've got; appreciating and understanding through knowledge of the story of how it got to be what it is and recognising what is valuable in that....looking after that, but also looking forward and accepting the new and using the best of the old to build the best for the future" (P3)

In practice these profiles are less distinct and absolute than presented here. While this taxonomy is helpful in recognising common goals and challenges for a 'wilder Scotland', it is important to recognise that Q-discourses are not mutually exclusive (Coogan & Herrington, 2011). Each estate loads on a particular profile, but it also has a lesser auxiliary loading on each of the other profiles too which, although not statistically significant, can be sizeable and meaningful. In practice, therefore, the perspective of many (re)wilding initiatives is a blend of multiple profiles because they collectively represent one conceptual space. Figure 8.1 reveals the complexity of the above taxonomy in terms of these interfacing profiles.

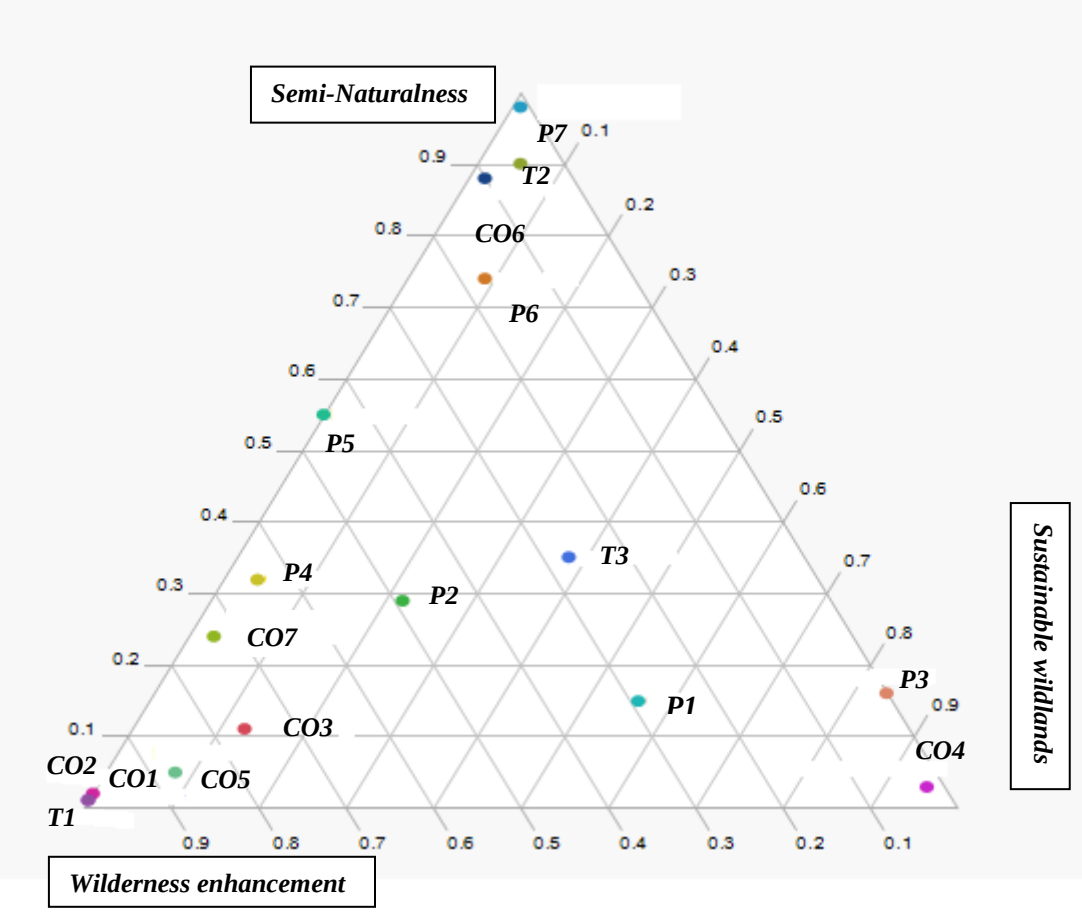


***Figure 8.1**: Ternary plot depicting the ratios of the three variables for each estate as a position within this conceptual space. This plot necessitated converting the data from their 3-dimensional form - where the vision for each estate was characterised by its loading on three factors – into a 2-dimensional format so they could be plotted onto the flat surface of the ternary plot. The calculations for this can be found in Appendix XIII.*

The three estates which were not used to construct the factor arrays (see Table 8.5) are significant in this regard. The confounded or insignificant nature of these three Q-sorts means that these estates do not map onto three profiles associated with this taxonomy –

instead they exist somewhere in the middle ground between the three (Figure 8.1). For example, P5's confounded Q-sort is equidistant on the axis between 'wilderness enhancement' and 'semi-naturalness' because this estate loaded significantly on both factors. Equally, P2 and T3 are located in the centre of this large conceptual space because they do not load significantly on any one profile, suggesting that they are an indiscriminate blend of all three profiles instead. P2's composite perspective is arguably the result of their struggle to identify with some of the more central premises of (re)wilding, as identified in Chapter 6 (supported by subsidiary discussion). Meanwhile, T3's lack of connection with one specific profile is more likely accounted for in Chapter 7's discussion of cognitive dissonance in that this estate seemed to lack clarity and direction during the Delphi and post Q-sort discussion.

In fact, thinking in terms of a complex conceptual space provides insight into the cognitive dissonance associated with many (re)wilding aspirations, and the discordance between values and practices, signposted in Chapter 6. For instance, in Table 8.17, *P1*'s loading on Pf.3 is considered statistically significant, but it does not exemplify the nature of this factor array as well as does *CO4* perhaps. This is supported by the post-sorting interview data where *P1* makes continuous reference to "less direct management" *(i).* But *P1*'s support of this more Pf.1 sentiment is less surprising when P1's Pf.1 loading is noted.

	Factor 1	***Factor 2***	***Factor 3***
CO4	*0.10*	*-0.12*	*0.67*
P1	*0.38*	*0.27*	*0.53*

Table 8.17*: CO4 and P1's loadings on all three factors.*

(Re)wilding initiatives employ divergent, and sometimes conflicting, wildland discourses which can result in discord and management tensions (see Chapter 9). Rather than representing distinct positions, these profiles represent the 'shades of grey' in a wildland ethos, supported by the fact that there are significant areas of shared vision across all profiles (e.g. aspirations for increased native woodland cover, minimal intrusion in these sensitive landscapes). This taxonomy therefore represents a simplified interpretation of what is, in reality, a series of nuanced (re)wilding frameworks. Each estate's Q-sort, therefore, represents a position in one inclusive conceptual space, characterised by varying degrees of radicalism and pragmatism. With "different ways to cut the cake", no two (re)wilding initiatives will be the same (Adams, 2012: 31).

Given the complexity of this conceptual space finding a term which could appropriately describe this nomenclature of rewilding discourses was important. After deliberation the term 'taxonomy' was favoured because it blurs any interpretation of distinct categories, conveying instead a sense of interrelated axes. 'Taxonomy' rather than 'typology', for

instance, evokes a biological metaphor which implies subtle variation (i.e. closely related subspecies). As a more familiar concept in cultural geography, 'phenomenology' was another alternative (Seamon, 2009). However, while this would provide a useful foreword to the social constructivism theme which emerges in Chapter 9, it was perceived to be a little too anti-positivist for the results of this Q-study, which aim to report on the reality of on the ground management perspectives. Therefore, while this chapter focuses on the applied context of rewilding discourses, Chapter 9 provides a more phenomenological discussion from a social constructivist viewpoint.

8.6 Exploring the taxonomy and its implications

But while the taxonomy above explores the areas of disparity between these different frames of wildland management, it does not provide any compelling arguments to *explain* these different perceptions and priorities. The following discussion, therefore, explores the nature of this taxonomy, the arguments underlying it, and its implications.

8.6.1 Multiple 'wildness' trajectories

By exploring aspirations for enhancing wildness, this Q-study has exposed a number of different wildland trajectories currently subscribed to in the Scottish context. Wildland is multi-dimensional and defined through a number of parameters (Chapt.6) (McMorran *et al.*, 2006; McMorran, 2007). As each estate conceives wildness through different parameters a number of divergent visions for its future emerge. The nature of the 'wildland' aspired to strongly influences the management approaches, practices and activities deemed appropriate. Therefore, while McMorran *et al.* (2008) classify 'different wilds' as the product of different degrees of wildland quality, this research suggests that beyond this, these degrees of wildness are conceived of and defined by fundamentally different parameters (Table 8.14).

Vision of wildland.....	***Aspirations***	***Management approach***
Pf1.'Nature's autonomy & experiential wildness' *"[wildland as]...an area of land where natural processes prevail […] and where the full complement of species are present"*	• *.....a self-regulating autonomous nature,* • *.....a perceptually 'wilder' landscape,* • *.....ecological functionality & resilience*	***'Let it be'*** • *Minimal intervention (although 'corrective intervention' is justifiable)* • *Landscape restoration (i.e. removing human artefacts)*
Pf2.'Naturalness/ecosystem health' *"[wildland as] an area of semi-naturalness – 'a natural ecology'"*	• *....semi-natural landscapes* • *....a natural, fully-functioning ecology* • *.....'future naturalness'* • *....integrated land uses and sustainability*	***'Wild by design'*** • *Landscape-scale restorative intervention* • *Ongoing management intervention* • *Directive, sensitive, management*
Pf3.'Historic authenticity' *"[wildland as a] Capability Brown [...] where one can get an experience of this wild feeling and where the contributions of historical, traditional practices to that sense of wildness are recognised"*	• *.....historical continuity,* • *.....authenticity,* • *.....safeguarding perceptual wildness,* • *.....community 'buy in' and sustainability*	***Sustainable land management*** • *Conventional conservation practices* • *Sensitive extractive practices* • *Community engagement*

Table 8.14: *Taxonomy matrix, inferred from triangulated Delphi Round 1 and Round 2 results.*

Table 8.14 shows that Pf1's 'wild' is closest to international wilderness standards in that they aspire to self-willed nature in an 'untrammelled' sense (Chapt.5) *(i)*. Rather than being governed by this more abstract value of wildness, Pf2 in particular takes a strongly biophysical wildland viewpoint. This perspective focuses on the tangible physical qualities of the land, rather than any philosophical of spiritual value *(ii)*. In terms of ecological parameters, the disparity between these profiles resonates with Aplet *et al.'s* (2000) distinction between 'freedom' and 'naturalness' as distinct wilderness attributes, where freedom is the extent to which the land is beyond human control *(iii)* and naturalness is the wholeness relative to historic norms *(iv)*. The nature of Pf3's 'wild' is equally distinct. With ideas of sustainability at the core of their vision, Pf3 estates focus on ways of having wildness in multi-functional landscapes. They might, therefore, concentrate on managing the detractors of wildland quality, as opposed the enhancers necessarily *(v)*. In line with aspirations for sustainable rural economies in marginalised landscapes, practices such as stalking are considered most important to Pf.3. Given its historical legacy in wildland, stalking is not viewed as detracting from wildland quality *(vi)*.

(i) *"[…] this buffering model that I was talking about came from the Wildlands project in the US" (CO7)*

(ii) *"[…]I find the whole spiritual wilderness thing a bit contrived. […] People will take away from these places what they want to. […] Our concern is the health of the land" (P7)*

(iii) *"[…]shifting from the status quo […] or attempted control of ecosystems [...] towards freedom in nature" (CO7)*

(iv) *"[...putting] all the pieces of the jigsaw back" (CO6)*

(v) *"[...] rather than defining wildness as what you have, what about what you don't have in wildness? [...] You don't have unnecessary intrusion, that could be straight fence lines, or all fence lines" (P3)*

(vi) *"[…] for us, enhancing wildness doesn't mean no stalking. […] In fact, the two can be complementary as enhancing wildness is all about a better quality habitat and that will make for a better quality stalking experience" (P1)*

8.6.1.1 Management implications: degrees of intervention

The implications of different narratives for management interventions are wide-ranging, and possibly the most critical theme for differentiating profiles. The degree, purpose and duration of intervention considered appropriate in wildland varies from profile to profile and arguably equates to a 1) 'let it be', 2) 'wild by design' and 3) sustainable land management perspectives (Table 8.14). Guided by Commoner's (1971) 'third law of ecology' in terms of 'nature knows best', Pf.1 estates sometimes struggle to reconcile management intervention with their vision of wildness. In principle, they place faith in the land's ability to heal itself when allowed the autonomy to do so *(i)*. Well-founded,

short-term interventions to restore some truncated natural processes are justifiable, but generally the intention is to withdraw management over time *(ii)*. But, reiterating Chapter 6's point, 'minimal intervention', rather than non-intervention, is more common in Scotland *(iii)*. Despite the more purist philosophical position of Pf1, therefore, a degree of pragmatism is evident *(iv)*.

(i) *"It is the earth's ability to heal its own wounds" (CO7)*
(ii) *"Where there aren't any trees and we want trees we have decided that it is appropriate to be interventionist [...] but that is a relatively short term strategy for specific areas of the estate" (CO7)*
(iii) *"[...] do the minimal intervention possible. In some cases this will require a lot of management (e.g. deer) where the balance has been skewed so long and in others less will be required. The intention is still to do the minimum." (CO1)*
(iv) *"[...] manage nature where it needs it, leave it alone where it doesn't" (CO5)*

Where wildness equates to a 'natural ecology', rather than 'autonomous ecology', it is less compromised by management. Although in common vernacular 'wild' is virtually synonymous with 'no human influence', from Pf.2's ecological integrity perspective it loses these 'physically untouched' connotations. In fact, in many instances, wildland quality in this sense is maintained by management. Accordingly, more conventional conservation strategies are adopted; where wildness equates to a natural ecology, interventionist strategies are essential for restoring the currently degraded condition.

With aspirations of 'healing'/'restoration', Pf1 and Pf2, significant parts of their visions are remarkably similar. The point of divergence is the 'means' rather than the end, and at times even this is not very different *(i)*. A key difference between Pf1 and Pf2/Pf3 is, respectively, their purist and pragmatic approaches. Perhaps, therefore, rather than conceptual convergence or divergence, the difference between these approaches is captured by Pf2's desire to speed up the process through targeted intervention *(ii)*. Pf.2 estates generally lack faith in the idea that a 'let it be' approach will restore a natural ecology *(iii)*. While the purist nature of Pf.1 means that the mechanism for attaining 'wildness' must be 'wild' themselves, Pf.2 believes that the 'product' (in terms of the biophysical quality of the land) is more important than the 'process' (a point which accords with Callicott *et al's* (1999) compositionalist vs. functionalist views of the natural world). With more clearly defined parameters in terms of endpoint – i.e. species composition and functionality – directive management is necessary for Pf.2 estates. Consequently, while natural outcomes are sought, it is acceptable to mimic natural processes through human agency *(iv)*. The potential for these discourses to converge in the future as restored processes allow for less intervention across all profiles is apparent, but this will not be in the near future *(v)*.

(i)	*"[...] if you can achieve your goals with minimal intervention then that is great – if you can then that is certainly cost effective, easier and so forth, but […] how often can we actually achieve our goals without intervention?" (P6)*
(ii)	*"Bringing on the same results [as a minimal intervention approach], but quicker" (CO4)*
(iii)	*"In our situation, the history of human impact is too great (e.g. extent of deforestation, modification and reduction of habitats, high numbers of deer and sheep) to make non-intervention viable" (T2)*
(iv)	*"We can regain something, but we will have to regain it through management" (P6)*
(v)	*"Perhaps in the future the management intervention can be reduced and withdrawn, but not over the next century" (CO6)*

8.6.1.2 Cultural value in wildland

Similarly, different parameters of wild have significant implications for the place of people in nature, and thus for the place of Scotland's rich cultural heritage in wildland. Where aspirations to enhance the primitive character of wildland are important, cultural heritage is sometimes problematic, being removed in some instances by Pf.1 estates to enhance the 'unmodified' quality. Contrastingly, Pf.2 and Pf.3's less purist discourses acknowledge the constructivist criticisms of wilderness more readily. For Pf.3, and Pf.2 to a lesser extent, wildness exists in relation to, rather than contradistinction to, people; if there is no-one there to experience the wild quality then there is no wildness *(i)*. The future of Pf.3's wild in particular includes strengthening the heritage story of these landscapes and encouraging practices which maintain these cultural roots *(ii)*. For Pf.3, a landscape's history and folklore bring meaning and identity and are important to the authenticity of wildlands. While the quality of natural landscapes remains central to Pf.3, the human history of wildlands is celebrated too. Furthermore, while sceptical of Pf.1's idea of sustainability in a 'wild future', the marketable potential of the nature *and* culture of wildlands to generate revenue is more readily recognised in Pf.3 *(iii)*. But as is the case in any Q-study, it is important to recognise that Q-sorts represent relative, rather than absolute, rankings (Barry & Proops, 1999). Consequently, while landscape quality and experiential wildness score considerably lower in Pf.3 and Pf.2, this does not mean that these profiles do not recognise, and value, such qualities. For instance, despite the challenges it would bring to their broader vision of upland sustainability, a Pf.3 estate would still remove fencing to 'rewild', but this would be a more strategic, case-by-case decision than the 'presumption against fencing' in Pf.1. Unlike Pf.3, Pf.2 does not necessarily seek meaning through cultural heritage, but with their focus of recreating a natural ecology, some limited evidence of occupation and cultivation does not compromise their idea of wildland quality *(iv)*. Pf2 estates are typically comfortable with traditional land uses in wildland, and equally view them as important to the overall future sustainability of these marginalised landscapes in some instances.

(i) *"[…] a landscape with a long history of management […] can still be considered 'wild'. After all, what is wildness if not simply an impression upon an observer?" (T2)*

(ii) *"[...] along the lines of the traditional stalking we would like to get ponies back, they are an important part of the history of sport" (CO4)*

(iii) *"[...] gardening for perceptions of wildness, rather than abandonment for wildness" (P3)*

(iv) *"Rewilding need in no way involve removing people from the land" (T2)*

8.6.2. Purism, pragmatism and environmental philosophies

It is apparent that the relevance of purist, orthodox conceptions of wilderness differs considerably between profiles. The three profiles associate with varying different degrees of purism and pragmatism, ranging from Pf.1's ideological, almost metaphysical wilderness to Pf.2's biophysical condition and Pf.3's emphasis on identity, place and sustainable rural economies. As Table 8.15 demonstrates, therefore, viewing Scotland's (re)wilding visions as different points on a continuum is important to understanding the distinctiveness of these profiles.

A continuum of perspective.....		
Pf1. 'Restoring the land': *Nature's autonomy and experiential wildness*	***Pf2. Restoring a natural ecology:*** *Naturalness and ecological health*	***Pf3. Restoring the uplands:*** *Authenticity*
Decreasing significance of 'wildness' →		
Decreasing purism →		
Increasing place for cultural heritage →		
Increasing place for traditional practices →		
Increasing concern for sustainability as a 'three pillared' concept →		
Increasing utilitarian value →		

Table 8.15*: The profiles as presented as continua of wilderness values reflecting the fact that these profiles do not represent absolute positions; all themes upon which these profiles were constructed are represented as continua across the profiles.*

The (re)wilding trajectories above therefore represent shades of environmentalism as they are underpinned by differing perspectives on the relationship between humans and the natural world. The grassroots of this taxonomy is a spectrum of environmentalist positions, ranging from a more 'deep ecology' perspective to those more aligned with 'shallow ecology'. Importantly, therefore, while the finer points of this subject are specific to the wildland context, the broad underlying philosophical camps are familiar to most environmental debates (see Table 8.16). Of particular relevance is the distinction between the more technocentric interventionist and the more nurturing ecocentric mode described by O'Riordan (1981), and Stern & Dietz's (1994) 'altruistic', 'biospheric' and (to a lesser-extent) 'egoistic' classification.

Pf1. Fundamental principles of an ecocentric perspective in a 'wildland context'	*Pf2. Fundamental values of a soft technocentric perspective in a 'wildland context'*	*Pf3. Fundamental values of a soft-anthropocentric perspective in a 'wildland context'*
• *Most radical divergence from current conservation practices* *"[...] we need radical defenders of the green" (CO1)* • *The intrinsic, inherent value of nature (strongly motivated by biological egalitarianism)* *"[...] nature for nature's sake because nature needs champions" (CO7)* • *Holistic philosophy of ecosophy* *"We don't want harvesting of anything because we want the harvest products to remain in nature" (CO1)* • *Contemporary human interference in natural systems as excessive and detrimental,* *"Let the chips fall! (T1)* • *Not categorically opposed to technology, but advocates alternative, soft, intermediate technology,* *"We want to withdraw management and let nature take its course. We have to go on culling deer for now, but having lynx around would be better" (T1)*	• *Instrumental view of nature,* *"wilderness and wildlife need economic drivers to push them up the agenda" (CO6)* • *Humans as a reference point of value* *"[...] we think it's absolutely critical that people are out there experiencing this landscape so that they buy into its value" (T2)* • *Pragmatism in management* *"grazing is a natural part of the ecosystem but cattle are easier to manage and control than deer are"(P7)* • *Faith in classical science and economic reasoning (i.e. cost-benefit analysis)* *"It has to be viable [...] we can't be completely idealistic so we have to weight things up" (P6)* • *Faith in the application of science* *"We have really detailed datasets right across the estate showing what each soil type could support in terms of the NVC classification. The entire estate is broken down into polygons..." (P7)*	• *More utilitarian view of nature,* *"...there would be no thought at all that creating all this wildland wouldn't create opportunities for stalkers and sporting activity of some description" (P1)* • *Society as fundamentally transcendent above nature* *"There's no conservation without community" (CO4)* • *Human culture and nature as co-existent, and even complementary* *"It shouldn't just be about conserving the natural heritage. It should be about the cultural as well" (CO4)* • *More to preserve* *"It's an artificial environment. Man created it and so now we have to manage it kind of thing" (CO4)*

Pf1. Fundamental principles of an ecocentric perspective in a 'wildland context'	***Pf2. Fundamental values of a soft technocentric perspective in a 'wildland context'***	***Pf3. Fundamental values of a soft-anthropocentric perspective in a 'wildland context'***
• *People as subject to nature rather than in control of it,* *"[...] we owe it to the planet to do what we can to repair the loss" (T1)* • *Values emotional, intuitive and spiritual relationships and knowledge* *"...the inherent spirit within nature" (CO7)*	• *Restoration focussed* *"[...] the restoration of critical ecological processes and functions is at the core of what we're doing" (CO6)* • *Targeted intervention* *"In the future most of the stalking effort will probably be focussed on the hill as it's the dwarf willows up on the hill in the harsher climate that suffer a lot of the damage" (P7)* *"[...] quality habitat and quality architecture" (P7)*	
Criticisms of the Pf1 position by the other profiles • *Conceptually naive, idealistic and romantic* *"This type of land managers wants [...] to create some romantic image of the past"(P2)*	***Criticisms of the Pf2 position by the other profiles*** • *Too deterministic* *"I think the likes of [names a Pf2 estate] are saying we want to 'control' this"(P1)*	***Criticisms of the Pf3 position by the other profiles*** • *Trying to be everything to everything* *"I just don't think that [names a Pf3 estate] are being ambitious enough so all of their aspirations are diluted" (CO1)*

Table 8.16*: Summarising the values underpinning these different flavours of environmentalism. As Figure 8.1 suggests, in practice these positions are far less distinct as most nature/culture perspectives lie between neatly defined environmental positions.*

8.6.3 'Real world' influences: the significance of 'Factors' on 'factors'

While the individual Q-sorts represent the considered 'mission statement' of these estates, in reality there is often divergence from this conceptual position when faced with management realities. The Q-sorts therefore represent idealised statements of intent which, as they encounter 'real world' challenges, have to be renegotiated *(i)*. Therefore, while there are innumerable philosophical justifications for various management goals, there are equally a number of practical influences which must be recognised. One of the most significant is the importance of the *individual* (e.g. the Factors and estate managers) to the overall estate direction. Nowhere is this more apparent than in the relative positioning of two particular estates which, despite being under ownership of the same organisation, load on Profile 1 and Profile 3 respectively. This example is symptomatic of the significance of estate managers/Factors to estate aims and objectives (Wightman & Higgins, 2000; Wightman, 2012). While this particular Pf3 estate does not necessarily fit the ownership profile of other Pf3 estates, it arguably loads on this factor because of the estate manager's local roots and concern for this wild landscape as a 'place', rather than a series of habitats with species of conservation interest. Beyond the individual, recognising the significant influence of land ownership on visions for the future of wildland is important. While there are exemptions to the 'rule', as detailed in the above example, an intrinsic link between 'ownership' and 'management' is evident in this research. It is therefore important to consider the ownership structure of this Q-sample.

(i) *"I found the exercise quite revealing in terms of the compromises that are faced by land managers and the contradictions that exist within organisations which are often driven by what can be funded. For instance, you may support removal of human infrastructure but end up building a car park and putting in paths because it is part of a funded project" (CO7) (Pf.1)*

	***Profile 1*: Restoring the land**	***Profile 2*: Restoring a natural ecology**	***Profile 3*: Restoring the uplands**
% of study variance explained by each profile....	*25%*	*16%*	*9%*
Typical estate profile...	• *Predominantly Non-Government Organisation ownership,*	• *Predominantly Private and Community Trust ownership,*	• *Predominantly private ownership,*

***Table 8.17**: The ownership characteristics of estates comprising each profile.*

It is not coincidental that Pf.1 estates, with their concern for the intrinsic value of untouched nature, are typically under NGO ownership. Charitable environmental organisations are habitually motivated to protect landscape, habitat and wildlife (Chevenix-Trench & Philip, 2001) as this is often their *raison d'etre*. In fact, NGO ownership largely emerged from increasing concern that private ownership was not delivering on environmental protection (Croft, 2004). While this trend towards 'conservation estates' has been successful in many respects (Chenevix-Trench & Philip, 2001), it is equally criticised as being narrowly focussed and not demonstrating concern for the socio-economic dimensions of rural communities (Toogood, 2003; Warren, 2009a). Consequently, it is not surprising that the profiles which demonstrate more concern for sustainable rural economies, the value of cultural heritage and historical continuity are predominantly private and community owned. By taking land out of 'production' and handing it back to nature's control, Pf1's concern for the intrinsic value of nature relegates social, economic and cultural considerations to the periphery of its vision, thereby demonstrating what might be interpreted by some as an anti-people management approach *(i)*. With a more integrated vision for 'sustainability' as a three legged stool, the pragmatism of Pf2 estates is evident in their "directive, and sensitive, management" imperative (P6).

(i) *"[not all estates can] afford the luxury of throwing aside massive chunks of land to see what happens" (P6) (Pf.2)*

Beyond ownership, in some instances similarity in perspective might merely be a consequence of site specificity and geography. For instance, the significance of the historical legacy of the Highland Clearances is far less pertinent in Scotland's more southern ranges *(i)* (Richards, 2000). 'Wildness' is not a ubiquitous, nor uniform, quality (McMorran, *et al.*, 2008). The degree of, and nature of, (re)wilding is dependent upon the quality and nature of wildness already existent. For instance, while removing hill tracks in the Eastern Cairngorms might vastly improve wildness, this might be of little consequence in landscapes where vegetation sward height is more concealing or where the topography is more forgiving. SNH's (2013) wildland maps indicate that *P3*, with its close proximity to a sizeable settlement, is arguably less wild than *P4*, for instance. Perhaps unsurprisingly, *P3* adopts the pragmatic Pf3 approach, while *P4* is a more purist Pf1.

(i) *"Down here [geographically south of other respondent estates] we are lucky not to have quite such a historical burden [as that associated with the Highlands and their clearance] […] We thought we'd get more objections from people talking about the Clearances happening again, but it just isn't so significant here" (T1) (Pf.1)*

(Re)wilding frameworks, as with any conservation discourse (Adams *et al.,* 2004), are profoundly context defined and often framed by arbitrary parameters such as funding streams. This (re)wilding mandate, therefore, means *"different things from particular organisational, or membership driven perspectives" (S3)*. While this taxonomy is not representative of broader upland management objectives and motivations, it reveals significant divergence of priorities and values amongst even a subset of estates for whom wildland management warrants above-average importance.

8.7 Summary

Three distinct '(re)wilding' frameworks for Scotland have emerged from this Q-study. These divergent wildland trajectories are distinguishable on the basis of a number of taxonomic themes, most notably the significance of wildness as an experiential quality, the degree of concern for ecological integrity and the value attached to cultural heritage. These themes have far-reaching implications for the management approaches deemed compatible, and appropriate, with these aspirations. Consequently Scotland's (re)wilding estates employ radically divergent management approaches, ranging from 'let it be', placing faith in self-willed autonomy, to 'wild by design' through active restoration. The three perspectives explored here to describe these radically divergent framings might be labelled 1) 'restoring the land' 2) 'restoring a natural ecology' and 3) 'restoring the Highlands'.

This research does not seek to make judgements about 'good' or 'bad' approaches to enhancing wildness on the basis of their philosophical underpinnings. Despite some critiques to the contrary (O'Riordan, 1981), a management approach founded upon the principles of shallow ecology is not necessarily environmentally inferior to one rooted in deep ecology; pragmatism and anthropocentrism are, in fact, still good motivations for caring for the environment (Pepper, 1996). A key theme emerging from preceding chapters is that enhancing wildness cannot be conceived as managing the land for one particular species or for one specific outcome. Wildness means different things to different people. Consequently, as this chapter suggests, there are multiple routes to achieving a 'wilder' place, ranging from removing human footprints, to changing its ecology to embracing its history or simply marketing it as a 'wild' destination. As the multi-dimensional, continuum nature of 'wildness' is increasingly recognised, perhaps it is unsurprising that strategies for enhancing wildland quality are equally multi-dimensional and best represented as a continuum. The beginnings of a theoretical structure provided in this chapter therefore offer a means of recognising the positions associated with this spectrum of diversity and the desired future conditions associated with them. Clarity in understanding these "differing social representations of ecology, tradition and space" (Toogood, 1995: 103) through this 'wild framing' could be critical to resolving some of the practical management tensions associated with conflicting aspirations for the management of Scotland's wild places.

Chapter 9

'Wildly different wilds': a critical evaluation of Scotland's wildland discourses

9.1. Chapter aims

The final two chapters provide a two-pronged discussion. This Chapter focuses on the divergence between Scotland's (re)wilding discourses, while Chapter 10 takes a more gestalt perspective, exploring ways in which they broadly negotiate Scotland's ambiguous wildlands (Fig. 9.1). Therefore, while this chapter suggests (re)wilding initiatives are far from homogenous, Chapter 10 refers to them in an undifferentiated way. This is because, while there is significant divergence in (re)wilding approaches, the differences which are so apparent under the microscope merge into one another when the spectrum of upland management is considered as a whole.

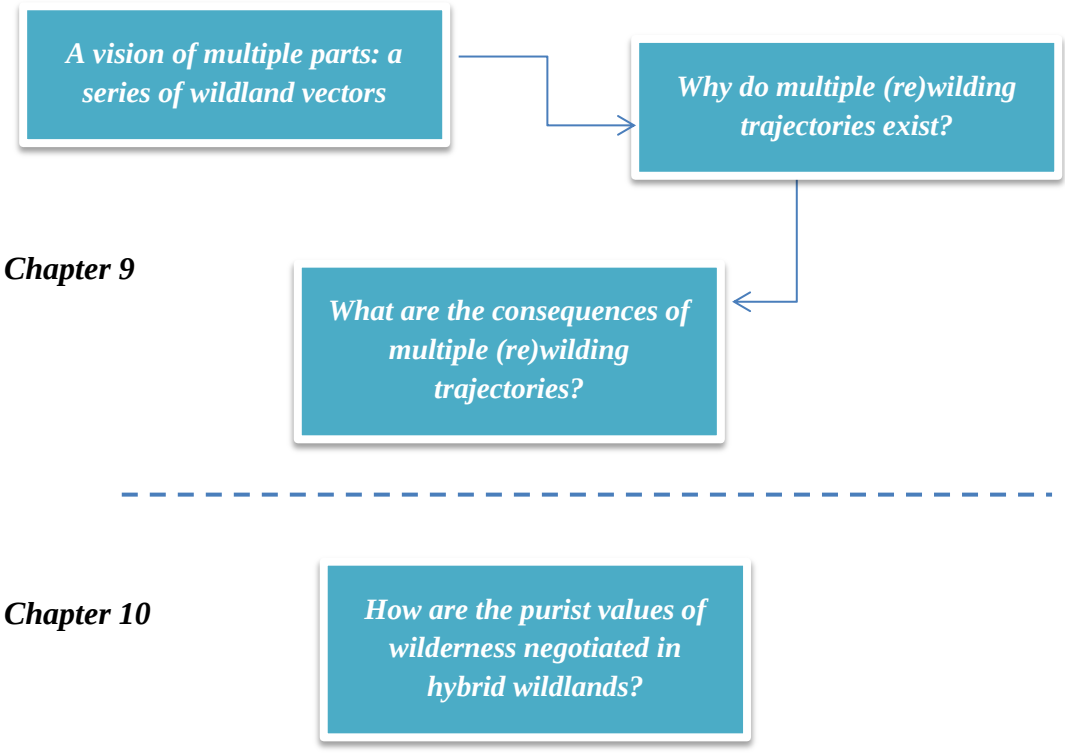


***Figure 9.1**: The structure of the discussion chapters.*

Previous chapters have revealed a number of contrary, and sometimes conflicting, management objectives and approaches in Scotland's wildlands. The overarching aim of this chapter is to critically appraise these disparate restoration emphases and to consider

the practical constraints and opportunities that they represent in developing a cohesive 'wildland strategy'. In doing so the potential for international wilderness management experiences to counsel Scotland's burgeoning wildland movement is considered.

Specifically, this chapter aims to:

- *explore how conceptions of 'wild' and 'natural' guide rewilding initiatives*
- *consider why rewilding, and its associated conceptual frameworks, are characterised in different ways*
- *consider the significance of social constructivism to the framing of rewilding discourses*
- *consider the practical challenges and management tensions associated with multiple wildland objectives*

In relation to Chapter 1's theoretical framework (Fig. 1.2), this chapter focuses predominantly on the research objectives relating to the conceptual foundations of rewilding and the practical corollaries associated with these.

9.2. Different 'wilds', different 'wilding models'

Complex questions like 'what is natural?' and 'what is wild?' are familiar strands of conservation discourse (Midgley, 2007; Alexander, 2008). While broad agreement about the desirability of more naturalness and wildness is apparent across (re)wilding discourses, underlying interpretations of what this means are divergent (Gamborg *et al.*, 2010).

It is often stated that both 'natural' and 'wild' defy definition (Hull *et al.*, 2001; Hobbs *et al.*, 2010a; Tweed, 2010a). Broadly speaking, both naturalness and wildness describe a lack of human effect (Cole & Yung, 2010), but beyond this vague characterisation they have multiple meanings (Landres *et al.*, 1998; 2000). Naturalness, for instance, is used interchangeably to describe historical fidelity (Steinhoff, 2012), ecological integrity (Machado, 2004), authenticity (Dudley, 2011), ecosystem health (Vucetich *et al.*, 2012) or freedom from intentional control (Woods, 1998; Aplet & Cole, 2010; Hobbs *et al.*, 2010a; 2010b). Ecologically, 'wild' may be more persistently described as "a place [in which] its order is created according to its own principles of organisation" (Turner, 1996:112), but in a broader landscape character sense, it too is unmoored (Abbott, 2011a). To complicate matters, these already nebulous concepts are often conflated in the wilderness setting, where they tend to be used interchangeably to describe broad notions of 'wilderness value' (Chapt.5) (Landres *et al.*, 2000). Scotland's wildland debate is therefore fraught with multiple meanings - "hampered by the terms in which it is framed" (Ridder, 2007a:8) and by diverse restoration targets which mean

that different (re)wilding initiatives aims for different targets: the way the landscape looked in the past? The way its ecology would behave if humans didn't intervene? The way the landscape should look in the future? (Anderson, 1991; Cole & Yung, 2010). Figure 9.1 explores the range of wilderness values encountered during this research.

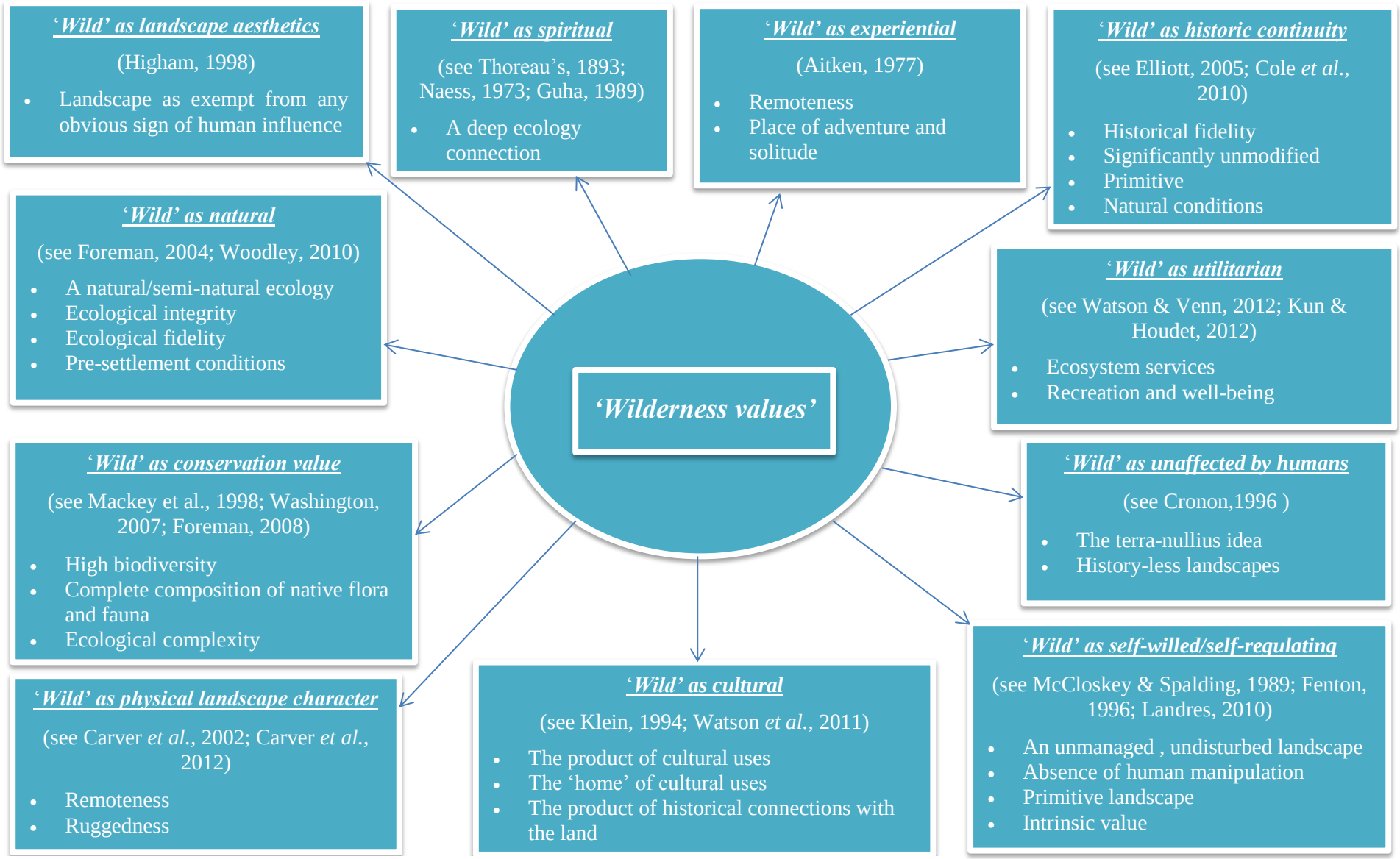


Figure 9.2: *The range of wilderness values associated with (re)wilding discourses throughout preceding chapters, most of which accord with common, traditional meanings of 'wild' and 'natural' in academic literature. While Scotland's wildlands are not considered to be 'wilderness', broad wilderness qualities are at the core of Scotland's (re)wilding discourses. Therefore, 'wildland' and 'wilderness' values are used interchangeably at times through this chapter and the next.*

The significance of biodiversity protection, flagship species, cultural and recreational values and sense of place within preceding chapters demonstrates that, as is commonly the case in wilderness restoration, Scotland's wildland movement is concerned with a broad range of values (Arts *et al.*, 2012). Given how broad the concept of a 'wild place' is, ideas of (re)wilding have been shown to have recreational, cultural and philosophical parameters. In Scotland, distinct wilding vectors relating to 'land', 'experience', 'historicity' and 'intrinsic value' are evident. These are explored below.

The first of these is the 'wild nature vector', which emphasises the significance of ecological restoration 'in' wildland. Here, Scottish wildland is most valuable for its semi-natural habitats. Logically, from this perspective, "any future vision for Scotland's wild places should include the aim of enhancing the diversity and quality of their vegetation cover and wildlife" (McMorran *et al.*, 2006:6). The mechanics of this perspective focus on enhancing the resilience and coherence of Scotland's ecological networks, in accordance with the strategic direction outlined by Lawton *et al.* (2010). Sometimes this means focussing on particular assemblages of species and habitats defined against historical benchmarks which are considered to mark 'natural conditions'. However, more often, 'historical conditions' is subsumed by a broader concern for ecological resilience. Either way, ecological communities are an indicator of wild quality. Consequently, this 'rebuilding nature' vector implies a significant nature conservation agenda for wildland (Fig.9.3).

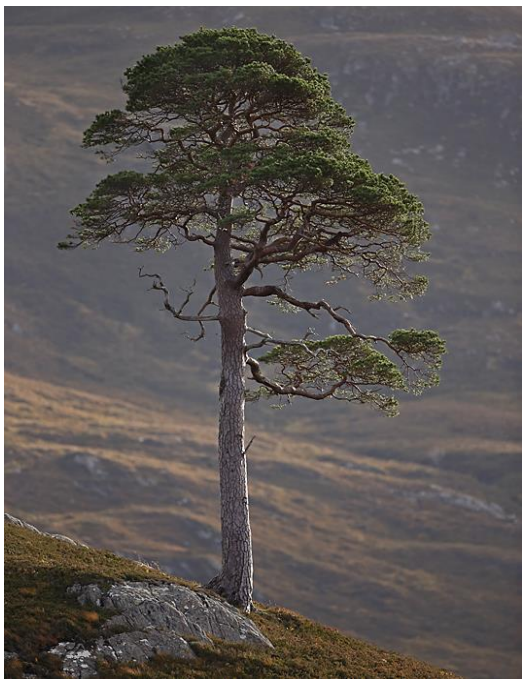


Figure 9.3*: The archetypal lone pine in a denuded upland habitat. This simplified ecology drives the vision for restoring a more vibrant ecology. Photo © Neil McIntyre.*

Beyond this tangible focus is a 'wildland' philosophy which assumes that human intervention compromises wild quality (Willers, 2001; Vucetich & Nelson, 2008). A

second vector is therefore 'wildness' in the sense of restoring self-willed land. From this perspective, wildland is a place where natural ecological processes are paramount (see Nickas, 2004). As Fenton (2004:5) argues, "letting our hills be wild means having no predefined outcomes, but letting nature decide the vegetation patterns". Motivated by the belief that UK conservation maintains artificial ecosystems in stasis (Monbiot, 2013a), this theme favours Drenthen's (2007; 2009) idea that (re)wilding is about setting natural forces free and 'liberating' nature, as opposed to constructing new nature. It advocates letting nature do the work of conservationists by adopting a hands-off approach, despite acknowledgement (from some) that this may result in further ecological simplification (Ashmole, 2009). A central premise of the self-willed model is, therefore, the need to protect wildland from dogma (Fisher, 2004). Although ecological resilience is an anticipated result of self-willed nature, the real value of 'wildness' here is its "self-imposed restraint in a society that generally seeks to dominate and control all of nature" (Noss, 1991:121). From this minimal intervention perspective it is the 'otherness' of the non-human world that is valued (Gamborg *et al.*, 2012). In line with Fenton (1996) and Bauer *et al's* (2009) 'secondary wilderness', (somewhere less pristine but still sharing the (largely) unmanaged characteristic of primary wilderness), (re)wilding is a process whereby human intervention ends and the land (naturally) rewilds itself. However, at its extreme, this hands-off approach is considered idealistic for Scotland's truncated uplands (Woods, 2005; Rotherham, 2014).

In line with Hodder & Bullock's (2009) findings in England, creating the 'appearance of wilderness' is important in Scotland too. This 'wild experience' vector focuses on wild character from a recreational and experiential perspective. The value of wildland is therefore the opportunity for unconfined recreation and a sense undeveloped primitivism. The management, and restoration focus is, therefore, on the removal or modification of anything which – if left unchecked – might detract from this landscape aesthetic. The significance of the Unna Principles (e.g. 'no provisioning services', like directional signs) to this 'primeval character' emphasis is clear. The prominent 'hill tracks' lobby in Scotland currently (Brown, 2013) therefore resonates strongly with this vector. In some instances, (re)wilding practices which connect with this vector might give the impression of 'designing' wildland as they are motivated by this experiential undercurrent. While the meaning wildland in an ecological sense (either in terms of composition or processes as in the first two vectors) has been uncharted territory until now, this theme connects with the historical roots of the concept in Scotland.

Finally, the fourth vector takes a more 'cultural' perspective on (re)wilding. The modified state of Scotland's wildlands is readily recognised in this framing of wildland as a 'place', and wildland attributes are considered no less valuable because of it. Wildland is a valuable human artefact. Instead of placing value on pre-human conditions or an unimpaired state, this vector embraces the cultural history which has shaped today's sense of wildness. Perceptions of a 'working wilderness' are significant as (re)wilding appeals to traditions for legitimacy. Ideas of 'sustainable conservation',

premised on 'nature with people' and community involvement, are considered significant for engendering local support and ownership of wild places. Scotland's historic wild landscapes remain connected to Scotland's past, and the contribution of contemporary practices to maintaining this is considered significant. Therefore, while this vector maintains a strong nature conservation emphasis, the value of historic practices (e.g. muir-burn) to retaining an iconic species composition might be emphasised. This framing, therefore, resonates with Toogood's (2003) ideas on 'Highland reconstructionism', as i) the indigenous links to the land through memory, language and tradition are valued, and ii) a belief that humans and nature are an indivisible whole is central.

9.2.1. The vector matrix: multi-dimensional (re)wilding discourses

Figure 9.4 summarises the core ecological and cultural drivers upon which these distinct vectors are discernible.

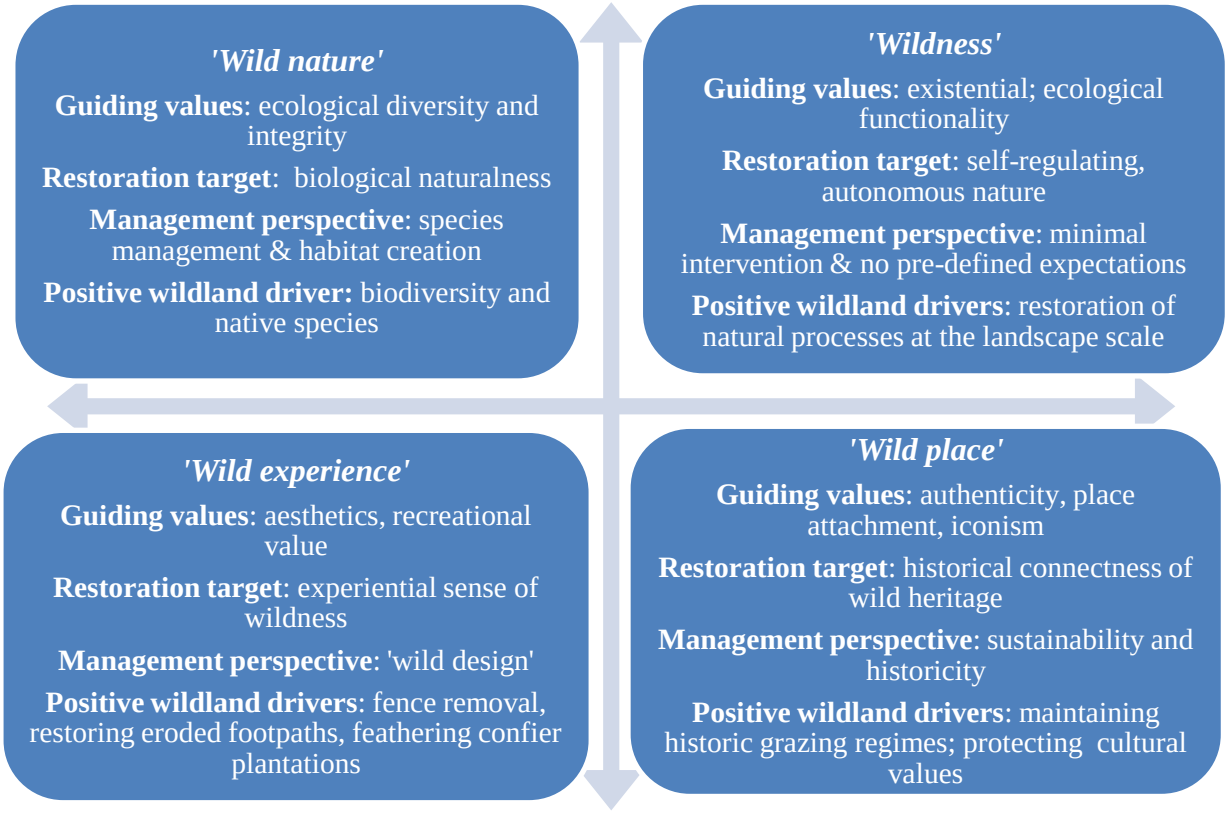


***Figure 9.4**: Vector matrix for Scotland's (re)wilding movement. Like Mausner's (1996) 'naturalness' schema, Scotland's wildland vectors cannot be considered exclusive or linear in nature; there are transactional relationships across these different vectors.*[1]

[1] Aside from anything else, significant synergies exist between the various drivers of wildland, e.g. removing particular management measures can release natural processes which also prompt changes in species composition and vegetation structure (Fisher, 2011).

Collectively these vectors represent a broad, multi-dimensional space for understanding wildland aspirations in Scotland. Rather than representing mutually exclusive trajectories, (re)wilding discourses are an idiosyncratic blend of these perspectives. Therefore, while all wildland initiatives are working towards a 'wilder Scotland', there is no agreed understanding of what the 'enhancers' and 'detractors' of wildland are. Instead, different (re)wilding models focus on different priority objectives and values. There is, for instance, significant disparity between those projects which relate to a minimal intervention and low profile economics ethos and those which adopt an ecotourism perspective, or focus on the maintaining cultural traditions where possible (Taylor, 2007). For some wildland is an 'ideal', a broad philosophy amounting to humility in management. For others it is a strategic land-use for an increasingly declining upland economy (Carver, 2007).

Perhaps the existence of a range of wildland philosophies is unsurprising. The natural environment has long been framed in different ways, comprising an assortment of flavours (Fischer & Marshall, 2010; Buijis *et al*., 2011). "The co-existence of multiple conflicting environmental narratives is a leitmotif of our times" (Warren, 2009a:376; Norton, 1994). From Pinchot's (1910) 'wise use' to Muir's preservationist, a dichotomy between 'use' and 'delight' has characterised environmental thinking since its inception (Smout, 2000). Efforts to catalogue these divergent positions into 'nature typologies' are plentiful, some of which are useful for considering Scotland's wild land discourses because they provide a language and framework for discussing these different value systems. Perhaps most notable is Cooper's (2000) distinctly British schema, in which nature conservation areas are categorised according to their cultural purpose. Scotland's 'wild ecology' vector broadly accords with Cooper's 'biodiversity' framing, where nature is a treasury of valuable entities, a 'set of parts', often maintained at an artificially high density through intensive management. An extension of this is the idea that maintaining traditional practices can sustain species and connect people and nature, as in a 'historic countryside' framing which is similar to Scotland's 'wild place' philosophy. Cooper's 'companion places' echo Scotland's 'wild experience' philosophy in that they offer opportunities to experience nature, while his 'wilderness area' frame encapsulates the emphasis on process – and lack of human influence – associated with the 'wild nature' philosophy above. Table 9.3 details a number of specific 'nature typologies' with which this range of wildland vectors resonates. For now, this table provides insight into some areas of divergence in Scotland's (re)wilding philosophies and acts as a reminder that these divergent vectors are the result of different underlying beliefs and assumptions about the natural world as various values are differentially prioritised.

Authors	*Typology*	*Relevance to this taxonomy*
Mabey (1981)	*Future naturalness; living museums; conserving past naturalness*	…..Some wildland discourses focus on a future condition, some on maintaining current value, and others on recreating the past
Ehrenfeld (1991)	*Process oriented management; species oriented naturalness*	…..Some wildland discourses concentrate on natural 'processes' rather than natural 'places'
Adams (1996a)	*Biodiversity; wilderness; past landscapes*	…..Some wildland discourses manage for species, akin to gardening, others focus on restoring desired features of past landscapes, while some seek to give over presently managed land to processes of ecological change
Peterken (1996)	*Management for diversity; natural woodland; traditional management*	.....Some wildland discourses prioritise diversity, some prioritise natural genesis, some prioritise traditional practices
Callicott *et al* (1999)	*Compositionalist (nature as apart from humans); Functionalist (nature as a process involving human)*	…..Some wildland discourses view the natural world as an assemblage of entities which humans are distinct from, while others view nature as a series of processes which humans are embedded within
Cooper (2000)	*Biodiversity; Historic countryside; Wilderness; Companionship*	…..Some wildland discourses focus on species composition and diversity, others on maintaining traditional practices and notions of nationhood, others on minimising human influence, while others are concerned with opportunities for human experience
Hull *et al* (2001)	*Health; Wildness; authenticity*	…..Some wildland discourses prioritise ecological health, others prioritise primitivism and the idea that 'nature knows best', others value the 'original'

***Table 9.1**: Summarising nature typologies which can provide insight into the differences between Scotland's wildland discourses.*

What is most interesting, therefore, is not the fact that these fundamentally different perspectives on the natural world exist, but that there is such divergence *within* a sample of land-holdings which, in broader upland management contexts, are bracketed as sharing a broadly uniform vision (i.e. (re)wilding). By teasing these clustered perspectives apart, this research has shown that this seemingly monochrome end of the spectrum actually consists of many different shades. Assuming that aspirations among wildland advocates are identical is therefore misleadingly simplistic, and fails to

acknowledge the complexity of wildland values in practice. In reality, the contested nature of the uplands, demonstrated through polarising spectrums such as conservationist vs. developer' (Warren, 2002b) and 'insider vs. outsider' (Burnett, 1998), is far more complex and contested than commonly depicted. In actual fact, these allegedly homogenous (re)wilding estates are on subtly – and sometimes radically – different trajectories. Furthermore, the fact that Scotland's (re)wilding initiatives are not always as radical and purist as commonly assumed could be significant in helping to alleviate some of the anxiety they induce (see Carrell, 2007) (e.g. (re)wilding is not synonymous with predator reintroductions). Although collectively these approaches do not necessarily resemble the more radical conservation strategies typically labelled as (re)wilding, it is important to recognise they are being adopted under the aegis of 'enhancing wildland', and ultimately it is these land managers' perspectives which are driving this movement.

9.3. Why do multiple (re)wilding discourses exist?

The following section explores why wildland discourses are a composite blend of different values and why different estates conceive the wildness of wildland differently.

9.3.1. The social construction of (re)wilding discourses

As Chapter 2 described, "[c]onservation is a human enterprise with human values" (Aitken, 2004:42). The vectors above therefore embody different social representations of wildland in accordance with land managers' values and expectations.[2] Despite the fact that an increasingly biophysical (nature conservation-oriented, rather than experientially derived) understanding of wildland is at the core of Scotland's (re)wilding movement (Chapt.6), to consider wildland in a purely biophysical sense is deceptive (Oelschlaeger, 2002; Arts *et al.*, 2011). The 'wild' and 'natural' sought by (re)wilding initiatives are in part, at least, culturally derived ideals and expectations (Cronon, 1996; Adams, 1996). While there is a *reality* to nature acting under its own forces (Berry, 2000), correctional, *ad hoc* interventions when self-willed nature does not deliver 'desirable nature' (Chapt.7) demonstrate that culturally relative perceptions and values pervade (re)wilding discourses. The 'wild' that land managers seek to conserve and restore is the product of social circumstances, cultural processes and underlying estate objectives (e.g. unsurprisingly land managers with a historical connectedness to the land expressed greater concern for cultural authenticity and kinship in wildland stewardship in Chapt.8). Wild places are more than the sum of their biological assemblages and geomorphological characteristics (Williams, 2002); they are lands of myth, legend and folklore which remains at the heart of Scottish nationalism and

[2] See Buijs (2009), Buijs *et al.* (2011) and Fischer & Marshall (2010) for detailed insight into social representations and framing of nature in environmental management practice and policy.

identity (Toogood, 1995; Adams, 1997; Habron, 1998b).[3] (Re)wilding discourses are, therefore, as much about a quasi-mystical connection with these relatively primitive landscapes as their actual biophysicality (Dudley, 2011). With these subjective topophilic roots (see Tuan, 1990), (re)wilding discourses are inherently plural because "one man's wilderness may be another's roadside picnic ground" (Nash, 2001:1). As different projects rest on contrasting values they develop different understandings of what a positive (re)wilding driver is (Fig.9.5), resulting in the disparate, and sometimes polarised, outlooks of preceding chapters.

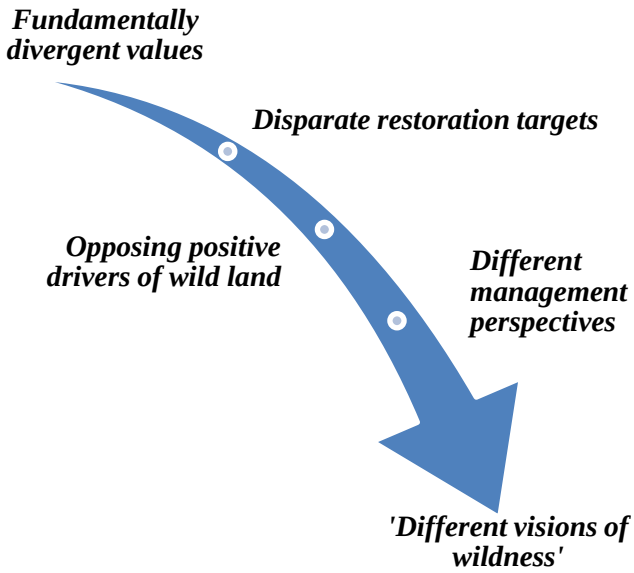


***Figure 9.5**: The progression from different values to different visions for a wilder future.*

In accordance with constructivist theory, elements of socio-environmental determinism are important to understanding wildland discourses. This was particularly significant in Chapter 5 where the influence of distinct cultural histories and environmental challenges to wilderness restoration was presented. Demonstrating considerable congruity with Trigger *et al's* (2008) culturally and historically defined Australian restoration frameworks, Chapter 5 shows how wilderness management discourses reflect the particularities of geographic, historic and cultural contexts which ultimately lead to different interpretations of what is desirable in the natural world (Table 9.2)

[3] See Toogood (2003) and Oram (2009) for a detailed account of the constructed identities associated with 'Highlandisation' and the wilderness myth in Scotland's most iconic landscapes, and Cooper (2006) for an explanation of the closely entwined relationship between nationalism and ideas of nature.

(Henderson, 1992; McMorran *et al.*, 2008; Newell & Osborne, 2009). Definitions of 'wild', 'natural' and 'restoration' are culturally, and geographically, embedded as narratives which are "interpreted and mobilised in space and place" (Smith, 2012:356). The historicism theme in Chapter 5 shows socio-environmental determinism at work. While American discourses ignore human histories to some extent, European respondents – particularly Scottish (Chapt.6) – are more likely to adopt a historicist position in light of pervasive and ancient human influences. Ultimately, nature restoration is a culturally contingent practice (Demeritt, 1998; Arts, 2012), defined by a particular environmental outlook and shaped by environmentally and culturally calibrated conceptions of 'wild' and 'natural' (Harrison & Burgess, 1994).

Wilderness Restoration Framing	
America	Restoration as ***renaturing/revaluing*** (restoring a particular part of a biophysical environment, e.g. reintroducing a species)
New Zealand	Restoration as ***removal*** (returning to an earlier state)
Northern Europe	Restoration as ***reconceptualising***/cultural ***reimagining*** (emotional repatriation)

Table 9.2*: Dominant international wilderness restoration emphases in accordance with Trigger et al's (2008) range of cultural preferences in ecological restoration discourses.*

9.3.2. Constructing nature: 'desirable results' and preconceived expectations

It follows that "if we accept that nature is constructed, then we must also recognise that conservationists are themselves involved in the processes of constructing nature" (Midgely, 2007:3319). Chapter 8's (re)wilding taxonomy themes (e.g. degrees of intervention, limits of acceptable change, significance of historical conditions), demonstrate how biophysical indicators and cultural values are blended to produce socially constructed expectations of what 'ought to be' in wild places. During Chapter 8's Q-exercise, land managers contended that different attributes of the natural world – and cultural landscape – were more important than others. In doing so, land managers were essentially 'constructing wildland' as different values and practices prevailed. The fact that land managers talk of different 'wilds' reflects these human choices about which attributes of nature are valued and worthy of protection and/or restoration, and which are not (Feldman, 2011a). This is not to suggest that there is "nothing real 'out there'" (Cooper, 2006:119) (Section 9.6.2). Instead, it suggests that what is 'real' is unavoidably a blend of culture and nature (Adams, 1997; Lorimer, 2006). Throughout this research, Caledonian pinewood has been the constructed 'natural' of the Highlands,

while the habitats associated with the on-going presence of sheep and 'deer forests' are "constructed as having little ecological interest" (Toogood, 1995:106).[4] This vision for restored woodland has therefore become a moral imperative which guides management action towards the way things *ought* to be (Higgs, 2003; van der Heijden, 2005; Warren, 2007). Table 9.3 provides an overview of how Amphlett (2003) defines the 'natural forest' at the core of the Abernethy NNR forest restoration vision. While typically not as comprehensive as this example, many wildland initiatives described some form of conceptual sketch of species abundance, diversity and distribution aspired to in their restored wildlands (Chapt.7).

Domain	***Character***
Spatial Scale	• An extensive forest • Patches of different sizes reflecting past disturbance • Metapopulations of wide ranging, low density species
Canopy and field layer composition	• Greater significance of birch, as is evidenced from the middle Flandrian • Less abundance of heather, which increased to over 200% of total other land pollen in 19th C
Disturbance	• Increased fire frequency, producing young stands at different stages of succession
Deadwood	• Presence of deadwood in many forms (i.e. dead stems, downed logs, dead branches)
Soil	• Presence of brown earth types soils as well as podzols and peaty podzols • Uneven forest floor due to pit and mound effect resulting from blown-over trees
Extinct keystone species	• Several large herbivores and carnivores have keystone roles, most notably beaver, lynx, wolf and most likely auroch

***Table 9.3**: Amphlett's (2003) overview of the 'natural forest' which is the intended future of the RSPB Abernethy NNR.*

The moral imperative implicit in these constructed ideals translates into a tacit framework where 'change' (namely ecological) can be assessed as 'good' or 'bad' – 'desirable' or 'undesirable' - in accordance with the journey towards their vision. This 'wildland blueprint' therefore guides management interventions towards a particular end. Table 9.3 is representative of the way in which conservation narratives are constructed around a body of ideas about the way the natural environment should be. These narratives provide a plumbline against which real nature can be judged. In

[4] 'Deer forests' in Scotland are a peculiar concept in that they refer to open-hill habitat and not woodland (see Wigan, 1993).

accordance with these – often subliminal – master plans, 'wilding' can become target-driven and associated with an ultimate destination.[5] Goals and objectives are identified, and translated into 'desirable limits' of natural change which become management gauges. The matrix of vectors in Figure 9.4 therefore presents the foundations of these 'ideological wilds' which drive Scotland's wildland movement. These different wilds form the manual for management actions, the reference conditions which guide managers as they try to realise their imagined wilderness. Accordingly, features of the reality which do not fit with this imagined idea are ignored or eradicated (Oram, 2009). Examples of such are plentiful (Chapt. 6 & 7), for instance *P3*'s removal of rosebay willow herb (*Chamerion angustifolium*), despite its native provenance. In accordance with this latent master-plan, wildland is cultural and, in fact, largely ideological (Cooper, 2006).

9.3.3. 'Wrong results' & ad hoc interventions

These cultural lenses have implications for management interventions because they provide yardsticks for measuring 'success' and give rise to the potential for 'wrong results'. Chapter 7 in particular described the conflict between theory and praxis as *ad hoc* management practices are employed when management measures do not deliver anticipated – or 'desirable' – results. As Midgley (2003; 2007) explores in a detailed case study of a pioneering non-intervention National Nature Reserve, when non-intervention (with the exception of deer control) does not deliver the 'natural' aspired to, management plans are revised to allow a more complex management regime. In accordance with pre-conceived expectations, unanticipated results are typically conceived as 'loss' in that they do not accord with the land manager's imagined wildlands. In reality 'damage' is defined only by the ecological faith associated with a particular place; ecological change is neither inherently 'good' nor 'bad', but is simply 'change' (Eden, *et al.*, 2000; Lackey, 2004; Luxmoor & Fenton, 2005; Trudgill, 2007).[6] While a minority of respondents (e.g. *P1*) remain steadfast in their belief that wildland must be self-willed - thereby accepting whatever 'results' nature present - for others the results of (re)wilding efforts are framed as 'good' or 'bad', 'delivering or 'not delivering', 'success' or 'failure' in accordance with their socially constructed blueprint.[7]

For the majority of Scotland's (re)wilding initiatives, native woodland is important to the biophysical character of wildland. Therefore, as woodland expansion fails to evolve

[5] However, as Chapter 10 explores, the relationship with telos in most wildland initiatives is actually more complicated than is suggested here.

[6] For instance, the rooting effects of boar are a critical (re)wilding tool for many (re)wilding initiatives which focus on releasing natural processes, while in commercial land, notably in the South of England, these rooting effects are considered to be 'damage' (Sandom *et al.*, 2013b).

[7] Despite the fact that in theory some of these respondents asserted that they had no predefined expectations.

at the speed or scale anticipated, minimal intervention in terms of only reducing deer densities is abandoned in favour of more intensive management practices. For *CO3* and *CO4* specifically, a minimal intervention approach symbolises the start of a 'wilding approach' to achieving a more natural pinewood. However, despite pine regeneration being critical to their vision, with time this approach has led to 'too much pine', calling for a shift towards more intervention, whereby broadleaves are planted to counterbalance this perceived imbalance. As 'desirable conditions' are not delivered, wildland discourses are renegotiated to legitimise management approaches which will deliver that 'vision of wildness'. As management interventions are rationalised as preventing 'undesirable outcomes', "the landscape is being modified to fit a pre-conceived notion of what 'should be there'" (Fenton, 2011:37). The plentiful 'one-off management interventions' described in preceding chapters suggest that there is typically a conditionality to minimal-intervention. In accordance with the 'Wild Ennerdale' vision (www.wildennerdale.co.uk), interventions are justified "where complementary to the vision or where a threat to the vision is posed". Therefore, while nature's autonomy is a conceptual linchpin of (re)wilding, taking a fundamentalist approach to intervention is impractical in practice, particularly considering the range of aspirations beyond the 'wildness' vector above (see Section 9.5.2). While natural processes and undefined expectations are driving (re)wilding in Scotland on one level, on another level visions for wildland are imagined in accordance with these individual, and socially-influenced, values and preferences. But, liberated nature behaves in unpredictable ways in modified environments and does not necessarily support romantic ideas of how nature should be (Agnoletti, 2006; Rotherham, 2014). These wildland values are constantly being balanced, therefore. Through continual processes of rationalisation, the degree and nature of management considered appropriate is renegotiated to satisfy specific visions and ensure delivery of a range of wilderness values (see Harrison & Burgess, 1994; Midgely, 2007; Trigger *et al.*, 2010).

9.3.4. Sociology of wildland science

Historically, UK conservation has had a strong relationship with science as ecology has served to objectify subjective ideas of nature (Adams, 1997; Fenton, 2006; Taylor, 2005). Because social constructivism has been used to undermine the case for wilderness conservation in the past, conservationists can be understandably defensive of the idea that naturalness, or wildness, is a "figment of humanity" (Kemal & Gaskell, 1993:3 Ivakhiv, 2002).[8] Throughout preceding chapters the "solid ground offered by science" has been important in justifying management actions, particularly *ad hoc*

[8] Counter attacks on social constructivism by wilderness defenders have been plentiful too (e.g. social constructivists fail to deconstruct their own rhetorical and assumptions (Ivakhiv, 2002); constructivist logic extends to all concepts (Crist, 2004); constructivism fails to take environmental crises seriously as it diverts attention to discourses surrounding the crisis, rather than the crisis itself (Dudley, 2011); and it fails to acknowledge the value of wilderness as a biological concept (Kormos & Locke, 2008).

interventions (Midgley, 2007:3320). By seeking refuge from constructivist criticisms of (re)wilding in the supposed objectivity of science – and an increasingly biophysical understanding of wildland – (re)wilding initiatives believe that their actions are rooted in an objective reality, rather than in the subjective realm described above. Science is presented as a way of escaping these subjective parameters, providing a rational way forward instead.

It is intriguing that (re)wilding, which aims to move beyond prescriptiveness in conservation, is so informed by scientific norms on the ground. However, as curious as these (at times strongly) normative foundations are, this is less significant than the reality that scientific knowledge is itself shaped by social processes. Science is not the impartial arbiter that wildland initiatives present it to be (Aitken, 2004; Jelinski, 2005). 'Facts' cannot be wholly separated from the values that shape them because scientific viewpoints are a reflection of societal values and ideas, leaving 'wildland' with little fixed reference in reality (Adams, 1997; Woods & Moriarty, 2001; Townsend, 2006). Governed by the same mind-sets and narratives which frame wildland, scientific norms become persuasive resources used to support or undermine particular management perspectives (Midgley, 2007). (Re)wilding discourses use science to ensure delivery of the wildland they aim for – a wildland that has been constructed socially, not scientifically (Bird, 1987; Townsend, 2006).

The purpose of this section is not to pass judgement on the fact that land managers are guided by human values; after all, human values can be genuinely ecocentric (Chapt.10). Instead it emphasises the fact that no scientific formula can reveal how nature *ought* to be (Aitken, 2004:44). While interventions are presented as springing from nature's own moral and ethical tenets, in reality "nature justifies nothing" (Evernden, 1992:15; Proctor, 1995; Dunn, 2009). An 'ethic of action' cannot come from science alone (Taylor, 2004b). Understanding (re)wilding discourses, therefore, requires consideration of the cultural and social dimensions shaping it too. Trying to separate scientific principles and human values in (re)wilding will result in an overly simplistic view which fails to account for abstract influences, like nationalism or identity for example (Cooper, 2000; Reaser, 2001; Trudgill, 2008). While science is unquestionably important to (re)wilding, it is equally important that it does not conceal the cultural values of wild places, or shackle this movement with goal-directed science (see Section 9.6.2).

9.4. What are the consequences of multi-dimensional (re)wilding?

There are several consequences associated with multiple (re)wilding trajectories, notably (i) ambiguous restoration targets, (ii) shifting baselines and (iii) conflicting mandates. The significance of these is explored below.

9.4.1. *Ambiguous restoration targets & shifting baselines*

The plurality of socially constructed – and continually renegotiated – wilderness values means that there is no innate quasi-wild, quasi-natural condition of wildland to aim for (Drenthen, 2007). No state of 'natural' or 'wild' is inherently more authentic than any other because there can be no absolute definition of 'wildland quality'. Instead (re)wilding discourses rest on how these broad qualities are defined, how Scotland's complex natural history is interpreted and how the non-static nature of ecological systems is negotiated (Fig.9.6). Rather than any unconditional quality for wildland, there are only situationally dependent narratives which are context, scale and value contingent (Proctor, 1995; Simberloff, 1990; Robbins & Fraser, 2003). In the absence of a *bona fide* wildland quality, reaching agreement on restoration targets is difficult and presents a significant challenge to developing a future wildland strategy; "how do we define the 'wilderness' on which (re)wilding is based?" (Naeem, 2013:437). With no 'litmus test' for wildness, whose 'wild' should provide guide action (Woods, 1998; Katz, 1998)? With no static reference points against which Scotland's (re)wilding visions can be judged, the touchstones change in accordance with different framings. What might be a wildland enhancer from one perspective becomes a detractor from another (e.g. Chapt. 6's tree-planting polarity). Ideas of 'authenticity' in wildlands are elusive where historically complex landscapes meet socially constructed discourses of 'wild' and 'natural' (Deary, in press).

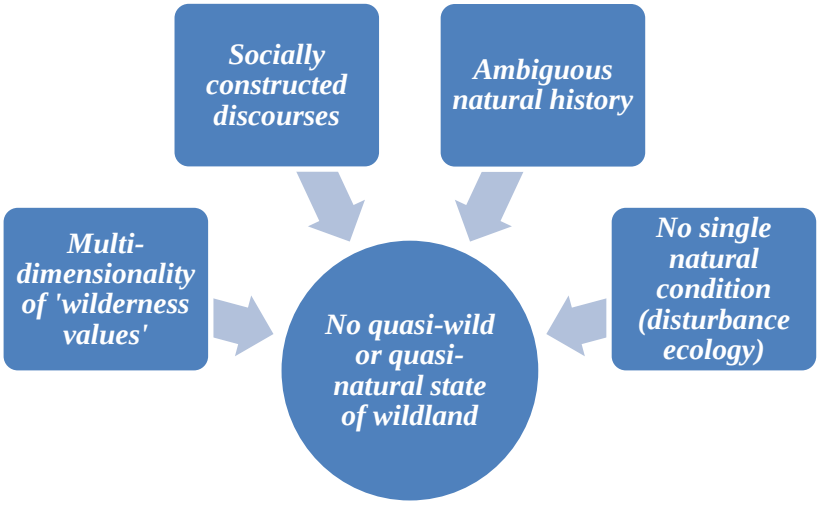


***Figure 9.6**: The subjective areas of negotiation in (re)wilding discourses which mean that there can be no objective 'wild' or 'natural' state for wildland. If there is no single 'truth' or absolute condition of authenticity, there can be no unequivocal guide for restoration or underlying management philosophy for wildlands.*

Given that multiple values are prioritised differently, conflict over future aspirations for wildlands and appropriate management options is inevitable. In this sense, conflict over wilderness restoration targets is not unique to Scotland (Chapt.5) (see Eden, 2002; Buijs *et al.*, 2011). However, it is perhaps exacerbated in cultural landscapes where a broader range of conditions can arguably be legitimised as an authentic wildland target. This is supported by Arts *et al* (2012:12), who report a similar degree of conflict in the Hoge Veluwe wilderness restoration (Netherlands), where the National Park Authority favoured drift sands over a natural autonomous forest because "drift sand had cultural-historical value, was an important habitat for rare flora and fauna, and had recreational appeal as a special landscape". Because desirable conditions for historied wildlands are measured against references points which are themselves significantly altered, shifting baselines are inherent within Scotland's wildland discourses (see Manning *et al.*, 2009; Vera, 2009b). Cultural influences have been so significant in shaping today's wildlands that measuring the degree of change in the uplands and establishing baselines for (re)creating a more natural state is impossible (Davies *et al.*, 2006).

Beyond shifting baselines, shifting goal-posts are an intuitive consequence of multiplicitous wilderness values (Landres *et al.*, 2000). Like America's complex multi-dimensional wilderness framework (Chapt.5), Scotland's (re)wilding discourses comprise multiple mandates, all of which have implications for one another. For instance, while the symbolic value of unmanaged nature is at the core of many (re)wilding discourses, this is overlain with ecological indices or the idea that wildland should offer open vistas which may imply management intervention. Therefore individual (re)wilding visions are changeable depending on which particular lens is in focus at a given time. The goal-posts move in accordance with these different parameters, giving mixed messages about what is appropriate and what is not under a wildland ethos (e.g. appropriate degrees of management intervention vary across different wildland vectors).

9.4.2. The plurality of wilderness values and conflicting mandates

Just as wildland values are elusive because their meaning is unique to the individual, practical management strategies are ambiguous too (Burkhardt *et al.*, 2012). The implications of different wildland vectors and contested wildland philosophes are that (re)wilding narratives can appear unmoored, even paradoxical at times (Chapt.7). As wildland initiatives try to balance many values, confused ideas, like the oxymoronic – but commonly cited – notion of "natural regeneration through planting" *(CO3)* arise. The constant renegotiation of wildland values results in dissonance between theory and praxis as management practices needed to satisfy certain values come into tension with, what is for some, the very core of wildland, its self-willed autonomy (Fisher, 2004; 2011). Ironically, therefore, despite the fact that shifting away from dogmatic conservation frameworks is a critical motivation for (re)wilding, some highly

manipulative, species - and habitat - specific interventions continue. Beyond self-willed processes, emotional biogeographies have connected wildland with species composition, as certain species are celebrated as ambassadors of Scotland's wildland.[9] At the core of Scotland's wildland debate is a tension over the place of deterministic interventions in delivering wildness, which is partly understood to be an unmanaged quality (Western, 2004). In its strictest sense, (re)wilding implies letting natural systems evolve into new states, ergo, "[b]y definition, whatever resulted would be a success" (Tweed, 2010:9; Nickas, 2004; Fenton, 2006).

As Chapter 5 discussed, multiple wilderness values bring about conflicting mandates. The dilemma and irony of 21st Century wilderness stewardship goals in terms of maintaining both natural conditions and untrammelled nature in an era of unprecedented change is increasingly recognised (see Keane, 2000; Cole, 2001; Landres *et al.*, 2005; Aplet & Cole, 2010). While it was assumed that protecting wilderness would provide everything (e.g. naturalness, wildness, historical fidelity), in practice the objectives of 'natural', 'primeval' and 'untrammelled' are in conflict (Lawhon, 2011), resulting in the intriguing contradictions explored in this research. In Scotland too, therefore, there is potential for the actions which restore and protect one quality of wildland to diminish another. As Chapter 6 in particular demonstrated, in many instances, wildland is expected, simultaneously, to be a refuge for native nature, maintain a primitive aesthetic, protect sensitive cultural heritage and be maintained by self-willed natural processes. Chapter 6's 'deer, trees, fencing and moorland' conundrum, which was labelled the "biggest challenge in wildland currently" *(S20)*[10], therefore provides an applied, and current, context for exploring the difficulties of conflicting mandates on Scottish turf.

9.4.3. An applied example: deer, woodland, moorland and fencing

As preceding chapters have demonstrated, for many wildland initiatives a wildland ethos is a holistic, and pragmatic, blend of all four factors. Consequently, (re)wilding in Scotland can mean restoring habitat across areas large enough for natural processes to operate, enhancing a 'wild' aesthetic and maintaining sustainable, traditional practices of cultural significance (Chapt.6).[11] However, as this research, and recent high profile debates such as the Mar Lodge Review suggest (see Windmill *et al.*, 2011), conserving natural and cultural heritage, restoring landscape aesthetics, maintaining public access and continuing some field sports is a difficult balancing act (Voysey, 2012).

[9] Garibaldi & Turner (2004) explore the concept of 'cultural keystone species' and their significance in conservation and restoration and Mech's (2012) discusses the dangers of sanctifying the wolf in the science of rewilding.

[10] This refers to biggest challenge ecologically, in terms of the recent restoration emphasis. The greatest threat to wildland more broadly is arguably windfarms.

[11] The meaning of 'traditional' and 'cultural' are equally as culturally derived as 'wild' or 'natural' and will vary significantly from initiative to initiative.

As wildland initiatives endeavour to balance these experiential, existential, biophysical and historical dimensions of wildland, management tensions arise (within, and between estates). For example, 'natural places' do not necessarily provide the 'wildest experiences' because restoring a quasi-natural ecology often requires visually intrusive habitat management measures (e.g. tree protectors, scarifying) (Mausner, 1996). Fencing has emerged as a particularly divisive issue in this regard as visually it is a significant wildland detractor, but achieving natural regeneration in its absence is very challenging (Sandom *et al.*, 2011), requiring 'virtual fencing' through stalking in remote, inaccessible areas where there is also a presumption against hill tracks. In tension with the historical 'wild place' vector, the level of culling necessary to allow natural regeneration without fencing can make a sporting cull difficult to attain (Windmill *et al.*, 2011).[12] This aside, the fact that red deer are emblematic of Scottish wildness can mean that reducing numbers often stirs local controversy (MacMillan & Leitch, 2008). In addition to this, the perceived wildness of the open moorland landscapes (Chapt.7) exposes a deeper tension between 'increasing wildness' and 'increasing forest cover' which reinforces the idea that 'unnatural' elements are woven into people's sense of place (Mabey, 2005). Because these experiential and physical concepts of 'wild' are not necessarily compatible (see Ostergren *et al.*, 2008; Vucetich & Nelson, 2008), user preferences are an important consideration in future (re)wilding efforts.

Figure 9.7*: Orange plastic barrier netting to reduce fence strikes by Capercaillie on the Kinveachy estate. While this is considered important for protecting this iconic wildland species, and thus to preserving the ecological integrity of wildland, it unquestionably detracts from the sense of wildness. Photo © Holly Deary.*

[12] Part of this issue relates to the controversial debate over a supposed 'vacuum effect' as (re)wilding estates with their improved habitat possibly act as a sing drawing deer in (see Reynolds, 1995; Ramsay, 1996; Staines et al., 1995).

Preceding chapters have also revealed a critical faultline between restoring wildness in the sense of 'feral nature' and restoring 'naturalness' by intervening for specific conservation ends. In reality, abandoned ecologies tend to be species-poor and dominated by species like bracken, as opposed to some "utopian and golden age ecology" (Rotherham, 2014: ii). Therefore, the 'wildness' vector which calls for minimal management has critical implications for the 'wild nature' and biodiversity of Scotland's plagioclimax landscapes. For example, many rewilding initiatives grapple with the tension between minimal intervention and managing disturbance levels to prevent an impenetrable field layer which limits seedling establishment. In reality, "ecological science and history suggest that the consequences of severance of human management may not be quite what the advocates envisage" (Rotherham, 2014:iii).[13] This elucidates another tension between ideas of unmanaged wildlands and the cultural value of traditional practices to perceptions of wild places, and the significant role they can play in maintaining features of conservation interest.

This brief, illustrative discussion serves to demonstrate how enhancers and detractors of wildness can oscillate across different wildland vectors. While removing a fence is rewilding on one axis, erecting a fence can be an act of (re)wilding on another. Deer, in particular, can be subject to multiple narratives in wildland, making them a management nexus in (re)wilding discourses (Fig.9.8).

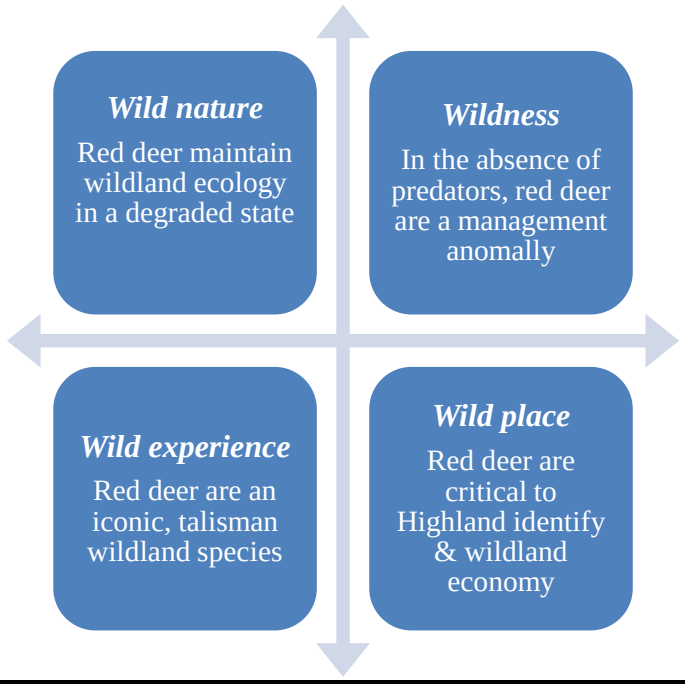


***Figure 9.8**: Red deer oscillate from being wildland detractors to enhancers through different vector frames.*

[13] Conflicts between natural processes and species and habitat specific protection have significant policy implications Jones-Walters & Čivić, 2010).

This research demonstrates that Scottish (re)wilding initiatives face a series of difficult trade-offs, thereby reinforcing an evolving body of North American literature which suggests that 'having everything' (e.g. self-willed autonomy, historical fidelity, primitivism and more) in wilderness stewardship is no longer possible (see Cole, 2001; Graber, 2003; Lawhon, 2011; Stephenson & Millar, 2012). The plurality and multidimensionality of 'wilderness values' means there can be no definitive position on what is congruous with wildland, and what is not. Therefore, as rewilding visions are dependent upon which lens is in focus at a given time, a wildland knot of conflicting mandates can emerge in which wildland initiatives are 'damned if they do, damned if they don't'.

9.5. Conclusions and summary

'Wildness' and 'naturalness' are thus revealed as highly malleable concepts at the interface between historically complex landscapes and evolving, socially constructed narratives; in the absence of a single *truth*, a range of landscape and ecological conditions can be judged as authentic (Hull *et al.*, 2001). Such different framings of the natural world are a pervasive problem in all environmental debates (see Senecah, 1996 in Hull *et al.*, 2001). What is important in this (re)wilding context is the recognition of the significance of the cultural and social dimensions shaping these positions. Accepting that nothing is absolute in wildland, the importance of our emotional biogeographies to (re)wilding narratives should not be underestimated. By presenting a broad multi-dimensional space (a vector matrix) for wildland aspirations, this chapter has demonstrated a way of conceptualising this plurality and of considering the conflicting mandates that can result from multiple wildland goals.

Efforts to frame (re)wilding in accordance with one particular wilderness vector will likely result in a loss of meaning and value. If the cultural landscape movement has taught us anything, it is that plurality of meaning can be productive, and that efforts to define landscapes and places in a single, monolithic way are unhelpful (Jacobs & Mulvihill, 1995; Abbott, 2011b; Ulvi, 2001; Rubenstein, 2004; Berkes, 2008). Therefore, while maintaining a broad paradigm of restoration allows for more diverse goals (Stanturf, 2005), searching for a single paradigm of restoration and conservation ignores the fact that there are many different ecological conditions, and many different ways in which people interact with, and make meaning from, wild nature (Ehrenfeld, 2000). A continually evolving plurality of wildland meaning is arguably a more desirable way of thinking (Friskics, 2010; Arts *et al.*, 2011). As Birch (1990) explores in his 'incarceration of wildness' thesis, if wild places are 'liberated places', then delineating specific areas and labelling them in accordance with narrow and prescriptive criteria is unhelpful. Perhaps, rather than becoming embroiled in debates over formal definitions, it is 'wilder' to have none (Taylor, 2011). There is wisdom in being cautious

of rigidly defining wilding approaches which could result in an overly prescriptive effort to control and direct landscape change, as this would be antithetical to this movement. While the intractable nature of wilderness terminology and paradox has been extensively debated (Callicott & Nelson, 1998; Nelson & Callicott, 2008), there is an expanding literature exploring the idea that it is *paradox* which brings meaning to wilderness (see Drenthen, 1999; Arts *et al.,* 2012). Maybe 'true wildness' is about contested places and contested meanings as "acknowledging the paradoxical nature of wilderness provides a potentially useful way of thinking about, and approaching the [wilderness] concept" (Arts *et al*., 2011:14). If meaning is brought to wilderness through paradox, then plurality in wilderness restoration is important because "any kind of restoration that reduces wilderness to one of its extremes is thus likely to miss out on what wilderness has got to offer to contemporary Western societies" (Arts *et al*., 2012:134).

Chapter 10

Negotiating 'wilderness values' in a cultural landscape

10.1. Chapter aims

Previous chapters have shown that the goal of (re)wilding challenges some critical values associated with traditional wilderness discourse. The (re)wilding of complex cultural wildlands is particularly problematic. Using Scotland's ambiguous wildlands as a lens, this chapter explores how a postmodern wilderness discourse could find a place for 'wild quality' in socio-ecological landscapes.

This chapter therefore aims to:

- *consider the significance of 'wilderness' framing to the conceptual congruity of rewilding discourses*
- *explore the potential for a postmodern wilderness discourse to settle 'wildness' within the cultural landscape context*
- *explore the potential for restoring wildland values while celebrating, a shared history between humanity and nature*

While Chapter 9 explored the heterogeneous nature of Scotland's wildland initiatives, this chapter takes a more gestalt perspective. Although there is divergence within the aims and approaches of wildland initiatives, their shared aspirations for a 'wilder' future mean that they all plot onto a spectrum of upland management discussions. This chapter steps back from the finer details differentiating wildland discourses to focus on how they broadly coalesce to overcome the conceptual challenges of (re)wilding hybrid landscapes. This chapter is therefore a conceptual discussion. Rather than taking an applied approach to the practical difficulties faced in the Scottish context specifically (which are significant in their own right), the focus is the on conceptual congruity of the (re)wilding concept.

10.2. (Re)wilding storied landscapes

Rewilding is a complicated concept. It is intrinsically connected with 'wilderness' (the value of non-human nature), but also with ideas of 'restoration' and recovery through human agency. (Re)wilding therefore gives a confused message about the place of human intervention; it implies protecting remnant wildness, while regaining lost wildness.[1] This central paradox is exacerbated in complex, storied wildlands where

[1] This connects with a more widely acknowledged tension between creative conservation paradigms and long-standing ideas of naturalness (see Adams, 1996).

more restorative action is generally needed than in 'big wildernesses' where the concept was (arguably) conceived. In Scotland, for instance, (re)wilding is framed as withdrawing human management, but simultaneously enabling remediation (Chapt.6). Similar to Arts (2012) discussion of wilderness restoration in the Hogue Veluwe (Netherlands), this research has underlined the contradiction in using intervention to restore a quality of autonomy in this sense, a contradiction which gives rise to polarised discussion over the place of intervention. In support of Landres (2004), Scotland's 'cultured wildlands' therefore demonstrate the challenge of managing wildlands as both a place (in the sense of 'natural ecology') and an 'ideal' (in the sense of 'untrammelled' lands) (Section 9.5.3, Chapt.9). This perplexity is embodied in the way that Scotland's wildlands are ambiguously constructed as being both 'wild', and 'unwild' in (re)wilding discourses. The wilderness idea is both embraced and criticised as it is celebrated as part of Scotland's contemporary identity, but lamented as something Scotland no longer has (Arts, 2012). "The wilderness is dead. Long live the wilderness" (Warren, 2004:141).

It is widely recognised that hybrid landscapes present challenges to restoration discourses (Brooks, 2006; Hourdequin & Havlick, 2011; Feldman, 2011b). While critical values which guide traditional restoration practice (e.g. authenticity and historical fidelity) are troublesome at the best of times (see Anderson, 1991; Adams, 1996; Alberts & Hazen, 2010; Cole & Yung, 2010; Hobbs *et al*., 2010), when applied to places which have evolved *in* the presence of humans their parameters become doubly elusive (Deary, in press).[2] Complex human histories present a significant authenticity challenge (Hall, 2010; Donahue, 2011). If wilderness, "the ultimate landscape of authenticity" (Cronon, 1996:16), is the antithesis of humanised landscapes then the loss of authenticity is marked by the onset of human modification (Oelschlaegar, 1995). While unconscious choices over levels of authenticity in (re)wilding discourses are therefore unavoidable, narratives which consider 'natural' to be synonymous with 'non-human' make little sense in human-modified environments. The problem with this kind of binary framing is that it results in a paradox alluded to by Midgley (2007) in the context of Scottish pinewoods management where the aim is to "retain […] the existing natural features, whilst removing the past influences of man" (Tickner, 1989:110 in *ibid.*). In complex lands associated with ongoing nature/people interactions these 'past influences' have shaped the 'existing natural features'. The two are not easily distinguishable in hybrid landscapes.

It is problematic then that 'rewilding' and the 'cultural landscape' appear to be in direct conflict with one another. While (re)wilding intuitively implies removing human influence and history, the cultural landscape concept celebrates this human dimension. But, preceding chapters have demonstrated that human histories do not always detract

[2] There are some interesting parallels between ideas of (re)wilding cultural landscapes and the recent move in the US to restore former military lands to wildlife refuges (the 'M2W' movement, see Warren *et al.*, 2007; Havlick, 2011; Hourdequin & Havlick, 2011). Both challenge the philosophy of restoration.

from wild places. Scotland's uplands, cherished for their wild quality, are "a man-made landscape, but no less natural [or arguably wild] for that" (SNH, 2011a:3) (Fig.10.1). Aspects of this human history are part of this wild value (NTS, 2002). Efforts to enhance wild quality in 'cultural wildlands' are therefore faced with the challenge of balancing two dimensions of natural value: (i) the value derived from its separateness from human action (ii) the value derived from its very human history of human action. As preceding chapters have demonstrated, this raises critical questions: how can an authentic state of 'wild' be conceived in palimpsest lands? To what degree should these past histories and geographies be legible in 'new nature'? Can wilding initiatives counter criticism that 'wild' is not an appropriate target for cultural landscapes, and that efforts to restore it will result in a contrived artifice?

Figure 10.1*: A degraded upland ecology celebrated for its perceptual wildness and at the heart of the rural economy of the Cairngorms. Just behind where this photograph was taken on Rothiemurchus estate there is an ancient broch, and just beyond that a popular mountain bothy. This managed, semi-natural landscape encapsulates the challenges and ambiguities of 'wilderness values' in Scotland. Photo © Holly Deary.*

10.3. Authenticity in wildlands

In accordance with Chapter 9's different states of wild, authenticity is conceived differently across (re)wilding initiatives. Debates over authenticity and the place of human management therefore bring into focus a theme which has been significant throughout this research: 'process versus destination'. Authenticity can be defined both through the management approaches adopted and through the ultimate aim of the (re)wilding process, the endpoint. In other words, is it better to make a 'wild journey' or to 'arrive at wildness'? This ontological tension, embodied in Chapter 9's 'natural processes' vs. 'natural places' difference, is a debate over the genesis of restored wildlands. A significant point of divergence between (re)wilding initiatives is therefore whether the ultimate product of wilding is considered to have the same value if it has

been restored by human intervention or left to find its own path (e.g. the planting vs. natural regeneration debate). The disparity between the 'let it go' and 'wild by design' pathways represents a schism between those who dream of a 'feral nature' and others a 'biodiverse nature' (Chapt.9). It is ultimately caused by debate over the degree to which technological intervention *can* restore, and retain, naturalness, or whether restored landscapes are merely an artefact of human ingenuity and the complete antithesis of 'nature' (Oelfke *et al.,* 2000; Sydoriak *et al.,* 2000).

10.3.1. The process purists: 'let go' and accept the results

Resonating with the 'untrammelled' mandate in the US Wilderness Act, in some (re)wilding discourses a place is only 'wild' when it is self-willed. In this sense, "it is wildness that truly sets wilderness apart" (Alpert, 2004:499). The desired outcome of rewilding is therefore autonomous nature and a relationship of restraint and humility between people and land. From this perspective, the central premise of (re)wilding is its offering of an antidote to pervasive human influence (Hodder & Bullock, 2009). Therefore, when it comes to the conflicting mandates of 'natural processes' and 'natural places', natural processes prevail because this kind of process-oriented discourse focuses on the symbolic value of non-human nature, rather than its conservation value (c.f. Nickas, 2004). The value of non-intervention is therefore the *process* of non-intervention itself. In this sense, rewilding is not necessarily about 'native landscapes', it is about 'wild nature' (like Chapt.9's 'wildness' vector). Accordingly, the concept of 'wrong results' is a logical fallacy because (re)wilding focusses on process, not results.

It is this philosophy on (re)wilding which leads to criticism of tree planting. If nature pursuing its own course is a critical wildland value, then this practice degrades wildlands by injecting more artificiality through human design (c.f. Elliott, 1997; Katz, 1997; Woods, 2005). In Scotland, for instance, renewed tree cover is a positive wildland driver for most (re)wilding discourses. However, from this process-oriented mindset, planting trees will result in an 'Emperor with no clothes' outcome for wild land because, although it enhances its instrumental value, it degrades non-human value further (c.f. Katz, 2000a). Fisher (2012) points to this genesis argument in the case of 'rewilding by herbivores'. Naturalistic grazing using domestic stock will most likely aid natural regeneration (Kirby, 2003; 2004; Vera, 2000; 2009). However, because domestic animals are not 'wild', this approach is not necessarily consistent with the rewilding process (Fisher, 2012).[3] Science and intervention can deliver little more than a "wilderness veneer" (Dunn, 2009:48) or "wildness by proxy" (Gamborg *et al.,* 2010:60). Fundamentally, from this perspective, if it is not the product of nature's own processes, it is not genuinely 'wild' land. But as Chapter 9 implies, followed to its

[3] Cooper (2006) also explores the fact that reserves with naturalistic grazing can begin to feel a bit like a zoo as the public become more excited by these exotic animals than the native nature.

logical end, this viewpoint would lead to overgrazing in Scotland in relation to deer control.

10.3.2. (Re)wilding with a target: a means to an end

While theoretically (re)wilding is connected with abstract philosophical values, in practice it retains a strong nature conservation agenda (Chapt.9). Accordingly, on the ground it is sometimes associated with more tangible values. From this perspective (re)wilding becomes a tool, a means to achieving an end; a restored ecology. Authenticity in this sense is associated with the biophysical character of wild places, which is considered to outweigh the non-human value above. Because terms like 'natural' describe specific ends (Cole, 2005), the means to reaching that end are less significant. Consequently, this kind of (re)wilding discourse adopts a more measured perspective on the place of intervention. Ultimately, the focus here is on qualities relating to ecosystem health. Therefore, because continuity of natural processes is not always a good barometer – nor substitute – for achieving this goal, interventionist action (e.g. tree-planting) is considered critical to (re)wilding.[4]

Importantly in the context of this research, Landres (2010) explores the fact that the hands-off approach to wilderness restoration/management is most feasible in large, isolated areas which are part of a diverse system of protected areas. Given the simplified ecology and fragmented habitat in Scotland's wildlands, therefore, significant interventions are perhaps unsurprising. As Sydoriak *et al.* (2000) demonstrate in Bandelier Wilderness, US, a hands-off approach to 'restoration' in altered ecosystems will not 'heal' the land when it is 'sick'. Sometimes more, rather than less, intervention is considered to be the only solution. While interventionist discourses often recognise the value of non-human nature, they typically accord with Peterson's (2008:651) view that nature restoring itself is an "expedient myth". From this perspective intervention is necessary to counter the effects of past intervention ('corrective interventions') before a self-willed quality of wildland is possible.

10.3.3 Is 'restoring wildness' oxymoronic?

In the end, natural processes and self-regulating ecosystems are important to all (re)wilding discourses. But whether the means to restoring these processes must be 'natural' in origin too is the point of divergence. Critically, therefore, this research has demonstrated a fundamental difference between 'natural processes' in a biophysical

[4] Dudley (2011) explores the fact that authenticity in naturalness has long been conceived as the product of continuity over time, but with changes towards disturbance ecology and rapid environmental change this is no longer necessarily the case. For example, Ohlsen *et al* (1996, in Dudley, 2011) in their study in Sweden show that age is not the primary determinant of lichen and fungi diversity in old growth swap forests. The main determinant affecting diversity is actually the presence of absence of dead wood, meaning that the "ecological processes present were more important than ecological continuity" (Dudley, 1996:152).

sense and in a symbolic sense. Although the difference is semantic perhaps, restoration '*of*' wildness and restoration '*in*' wildlands can mean significantly different things. While some (re)wilding discourses view 'wildness' as an end in itself, for others wildlands are the means – the mechanism, or place – for fundamental ecological restoration. Once again the importance of understanding and defining the 'wild' upon which (re)wilding paradigms are founded is clear. Whether (re)wilding is to an active or passive process is a result of how 'wild' is conceived.

This process vs. endpoint dichotomy accords with Gamborg *et al's* (2010) positions on the process of de-domestication. Like their historicist viewpoint, for the 'process purists' the legitimacy of nature depends upon past developments. In other words, the past is important in making decisions about present management because historic continuity (in terms of natural processes) and integrity are critical to nature's value. On the other hand, like the consequentialist perspective, sometimes the end value is the conceptual basis for taking action or not. As Gamborg *et al's* schematic diagram shows (Fig.10.2), where nature is biodiversity its value is in its physical assemblages and biophysical character. However, when nature is a set of processes, its value – and thus authenticity – is contingent upon these natural origins. Therefore, regardless of the "success of the copy" (Gamborg *et al.*, 2010:72) nature which is safeguarded through active intervention will always lack authenticity.

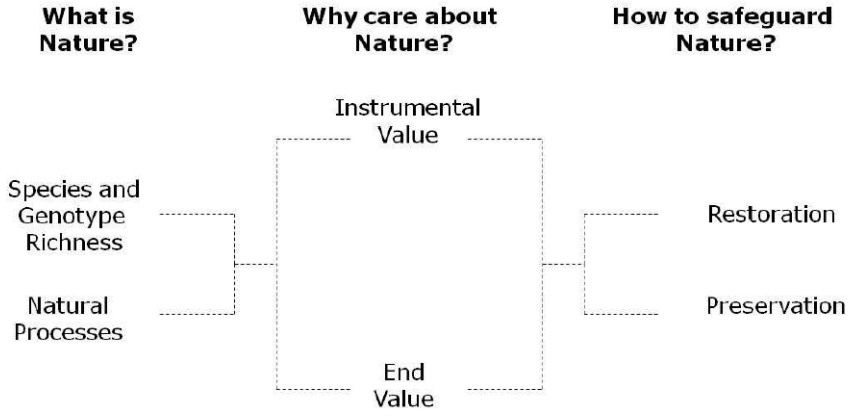


Figure 10.2*: These two (re)wilding philosophies above map succinctly onto Gamborg et al's (2010) schematic diagram of de-domestication perspectives. Although different terms have been used to describe this theme in preceding chapters (most notably 'journey'/'process', rather than endpoint), this figure neatly encapsulates the discussion about wildness, naturalness, process and endpoint. N.B. that while 'end value' is used to describe the endpoint focused perspective in this research, Gamborg et al. (2010) use 'end value' to describe the process-oriented value.*

In reality, these positions are not mutually exclusive. (Re)wilding discourses are a blend of values, having regard for both the biophysical and symbolic value of wilderness. In

Scotland, for example, no-one is calling for a completely hands-off approach (e.g. even the most purist initiatives support deer control). The significance of this theme is, therefore, that it highlights a significant debate in environment philosophy which is at the core of the (re)wilding contestation: if restored nature is less valuable than 'original nature', is restored nature merely an imitation or a fake (Elliot, 1982; 1997; 2005)? Proponents of this 'restoration paradox' perspective suggest that nature's intrinsic value is in its non-human genesis and causal continuity with the past (Katz, 1992; Cowell, 1993; Pojman, 2000; Elliot, 2005). In the Scottish context, for example, this kind of viewpoint is problematic for (re)wilding efforts on two counts: it implies that (i) what is lost from Scotland's degraded wildlands cannot be replicated,[5] and (ii) even if it could, the management interventions currently used in Scotland would be unable to restore it. In summary, "[i]f ecological restoration is warranted, haven't natural values already disappeared, and how can something distinctly non-human – naturalness – be restored by human actions?" (Woods, 2005:171).

But are (re)wilding efforts in places like Scotland really something to bemoan? Despite arguments over the irretrievable value in 'first nature', is there still value in trying to restore some semblance of this? Along with Light (2000), this research suggests that whether nature can be restored, and whether there is a moral obligation to try to restore it, are two different questions. Maybe restored wildlands will always lack intrinsic value, but for many (re)wilding advocates it is the trajectory towards wildness which matters.[6] The quandary facing (re)wilding discourses in degraded wildlands is, therefore, how to "reconcile the intensive management characteristic of rehabilitation with the conservationists' primary aim of protecting and promoting wildness" (Aitken, 2004:161). Can restoring wildness, and what's more, doing so through management, ever make sense?

10.4. Can management interventions be reconciled with the 'wild'?

Because the philosophical compatibility of 'wilderness' and 'restoration' depends on how 'wilderness' is framed (Gunn, 1991; Cowell, 1993) this section focuses on a renewed framing of wild places needed to make sense of the (re)wilding concept, particularly in significantly altered ecologies. Places like Scotland, which are less than 'absolute wilderness', require a creative, and nuanced, interpretation of traditional wilderness if the wild potential of these 'adulterated' wildlands is to be realised.

[5] See Markandya & Pedroso (2007) for a similar debate as to the substitutability of natural capital between weak and strong sustainability frameworks.

[6] This parallels critical debates in sustainable development that, while a truly sustainable state might never be in reach, there is value in moving away from unsustainable practices.

10.4.1. Beyond 'terra nullius': a positive wildland framing

Two broad understandings of wilderness have been significant to the (re)wilding debates in preceding chapters:

i. Wilderness as *terra nullius*: an untouched, pristine land, sometimes a wasteland
ii. Wilderness as *nature*: large natural areas of significant conservation value

Seeing as the authenticity of restored wildlands is defined by the parameters of 'wild' and 'natural' (Chapman, 2006) these different framings are significant. Historically, wilderness discourse has been founded upon the former with its "assumptions about the purity and inviolability of wilderness" (Henderson, 1992:394). It is this purist understanding of wilderness which makes (re)wilding such a conflicted concept, particularly when applied to historied landscapes. Wilderness in a *terra nullius* sense is defined by dualism, exclusion and ideas of an 'original state' (Chapt.2). The connotations of this received framing are problematic, therefore, because they result in (re)wilding being accused of being quixotic. For this reason, the more biophysical basis for identifying wild quality which has emerged in this research is important. As preceding chapters have demonstrated, Scotland's (re)wilding discourses connect strongly with wildland in an ecological integrity and broad cultural values sense. They dismiss the purist, received idea of wilderness, adopting a positive natural integrity definition instead. In light of Washington's (2007) description of the 'wilderness knot in social ecology' this is important. Along with others (see Brown, 1992; Miller, 1995), Washington explores the need for a shift towards more realist interpretations of wilderness which focus on the nature conservation value of wildlands. This research demonstrates that the essence of the (re)wilding concept does exactly this; the 'wild' in (re)wilding comprises large, natural areas, not *terra nullius*.

Despite the fact that (re)wilding throughout this research has been connected with the second of the above wilderness definitions, the received wilderness idea has become entangled in the debate. This has given rise to the conceptual ambiguity observed in preceding chapters. Critically, it is these purist roots which challenge ideas of wilderness values in landscape with a human history. The forged nature debate, for instance, contends that through restoration nature transcends the nature/culture distinction and becomes part of the cultural domain. Genesis criticisms therefore

assume that 'nature' and 'culture' can be meaningfully separated, which in complex wildlands, like Scotland's, is a fallacy of origins (Chapt.7). The irretrievability of wilderness values is therefore strongly allied with the purist idea of wilderness. Rejecting the absolute distinction between nature and culture associated with the received wilderness idea, therefore, undermines this 'faking nature' thesis (Light, 2000). In Scotland, for instance, where the stark opposition of nature and culture has not been apparent, these criticisms of restored nature appear less relevant. Critically, therefore, the greatest defence that (re)wilding discourses have against creative conservation criticism is open acknowledgement that the origins of their wildlands are partly cultural anyway. Ontologically Scotland will always be a cultural landscape, but as Chapter 7 demonstrates, cultural landscapes can still be wild.

Conceptually separating this more biophysical framing of wilderness from the *terra nullius* meaning is, therefore, critical to establishing conceptually robust foundations for (re)wilding. By focusing principally on the *reality* of ecological integrity in (semi)natural areas, (re)wilding initiatives can discount the importance of the 'original' and the nature/culture binary to wilderness value. Where (re)wilding is founded upon a positive, biophysical framing of wilderness, it can concentrate on positive ecological change, rather than unsullied, people-less landscapes. Understanding wilderness in an ecological integrity sense is therefore critical to making sense of (re)wilding. In Scotland, the distinct 'wildland' concept is helpful in this regard because, although it is defined by distinctly landscape-oriented parameters in policy at present, it has long distanced itself from purist North American ideology (Chapt.3).

The shift in emphasis from wilderness as a place which is natural to wilderness as a place where natural processes prevail in recent years is also helpful. As rapid environmental change has challenged traditional wilderness stewardship goals, the concept of ecological integrity has grown in significance (Table 10.1) (see Miller & Ehnes, 2000; Woodley, 2010). This encapsulates the shift away from composition towards a more ecosystem-based approach which has been important in preceding chapters. While ecological integrity has qualities in common with historical fidelity and traditional ideas of naturalness, it shifts the emphasis from 'cause' to 'effect' in that it recognises that specific ecosystem processes are more important than the species or force causing them (Angermeier & Karr, 1994; Callicott, 1996; Woodley, 2010).[7] Importantly, from this process-oriented perspective, the evolutionary and historic context that has shaped the system is important, and recreating the past is recognised as being impossible (Cole *et al.,* 2008). Equally, this emphasis on structure, rather than composition, arms this framework with a unique management emphasis because "active management and restoration, where and when necessary, are a fundamental part of the ecological integrity approach" (Woodley, 2010:121; Sydoriak *et al*, 2000).

[7] Processes in an ecosystem functioning sense, rather than in the philosophical genesis sense above.

Qualities of ecological integrity	
1.	Full complement of native species as present
2.	Indicator species should be viable
3.	Ecosystem trophic levels are intact
4.	Disturbance regimes operate to maintain mixed age-class biological communities
5.	Productivity and decomposition operate within limits for system persistence
6.	Nutrient cycling is within the limits for system persistence

***Table 10.1**: The qualities which make up the concept of ecological integrity, as summarised by Woodley (2010).*

This positive shift from a purist framing to a more process-oriented framing connects with Chapman's (2004) 'inseparability thesis'. Whether the natural environment has evolved freely and with little human intervention is a different matter from whether it is pristine and untouched. By rejecting the received wilderness idea in favour of ecological integrity, (re)wilding initiatives can acknowledge that "[…] unmanaged is not the same thing as unused or the absence of human impact" (Western, 2004:495; Kowarik, 2005; Landres, 2010). In Scotland, for example, (re)wilding initiatives aspire to a more self-willed nature in the future, but readily acknowledge that this will not change its managed past. In this sense, 'ecological wildness' is conceptually distinct from the connotations of pristine. Where wild describes self-will and ecological integrity, 'secondary wilderness' becomes a logical possibility. Like Machado's (2004) index of naturalness, this research suggests that where wildness is a state descriptor it is defined by the 'here and now'. Therefore, from this process perspective, historic continuity is less critical. While this section does not resolve the fact that intervention is required to reach the point of self-will (see Section 10.4.3), in (re)wilding terms it suggests that a natural system which develops with little human influence can reach a natural end, despite its history.

10.4.2. Future naturalness: diachronic wilderness

A common criticism of (re)wilding is that it implies reverting to a 'natural' state, which is paradoxical in the context of modern ecological understandings (Rotherham, 2014) and hard to reconcile with the 'Anthropocene' perspective of long-term, pervasive anthropogenic change. As Chapter 7 showed, the 're' prefix is unhelpful in this regard.

But beyond this labelling issue, this research suggests that accusations of (re)creating the past are partly unfounded. The idea of 'turning the clock back' is almost as contentious within wilding initiatives themselves as it is amongst their critics. In line with Hobbs' (2009:2862) review of native woodland restoration initiatives, this research shows the "progressive forward-looking" nature of (re)wilding approaches in Scotland. The idea of 'future natural' (see Peterken, 1996), therefore, has considerable potential in overcoming this 'historical baseline' criticism. Although in reality some proactive action will typically be involved in reaching this state from altered baselines (Section 10.4.4) (Alexander, 2008), 'future natural' is defined as the state which would evolve if human influence was removed. It therefore encapsulates a critical point in this discussion; where 'wild' is considered to be open-ended through time, it can be defined as much by its *potential* as by its current condition. The 'wild' at the core of Scotland's wilding discourses is generally diachronic in this sense.

The difference between a diachronic and synchronic 'wild' is, therefore, important to the global (re)wilding movement. Where 'wild' is framed synchronically it is backward-looking and defined by its past. What Elliott (1982, 1997) describes as 'causal continuity with the past' therefore becomes a *sine qua non* of wilderness quality. Critically, it is this perspective which leads to the sceptical views of wilderness restoration above (Woods, 1998; Voos, 2009). But, a strictly past-oriented view of wild places is too strong to be meaningful given that nowhere is 'history-less' in the untouched sense today (McKibben, 2006). In practice, therefore, wilderness values can only have relevance in contemporary landscapes when they are not contingent upon ideas of an uninterrupted, or static, past.[8] Given that, through (re)wilding, conservationists are acknowledging that the integrity of wildlands has been interrupted, the conceptual congruity of (re)wilding relies on a forward-looking understanding of wilderness values. From a diachronic perspective, wild quality is defined by its present and future quality, not by its past (Holland & O'Neill, 1996). From this non-purist perspective, it can recrudesce over time meaning "if we can see the potential for more naturalness in the future, we could be seeing wilderness" (Woods, 1998:141). This is important if the 'wilderness' in '(re)wilding' is to be compatible with "looking forward to a better nature" as above (Voos, 2009:202).

Recognising the longevity of (re)wilding aspirations can help resolve some of the difficult paradoxes associated with it, particularly in significantly altered landscapes. Where wilderness qualities, like self-will, are future qualities, even the most purist rewilding advocates can defend the manipulative actions considered critical to self-recovery. While wilderness restoration should not violate the natural processes philosophy (Pan Parks, 2009), if removing obstacles to ecological processes could enable more self-will in the future they can be legitimised (Woods, 2005; Sydoriak *et*

[8] The fact that synchronic ideas of wilderness do not adhere with modern ecology has lead a significant attack on the concept of wilderness '*preservation*' (see Gómez-Pompa & Kaus, 1992).

al., 2000). Manipulative interventions might, therefore, be described as the 'best-worst' option in this sense in a complex expression of Higgs' (1997) 'what is good restoration?' question. What does it mean to be a 'good steward' of wildland – standing by as degraded ecosystems degrade further, or intervening to do something about that? Katz (2000b) assumes that all (re)created nature is designed for human purpose, but in this research nature's intrinsic value has been at the core of some management interventions. In reality, "not every human action is one of degradation" (Feldman, 2011a:9; Light, 2006). Human intervention does not, therefore, have to be a 'moral' anomaly, it can be "an affirmation of what is right, and what good wilderness management should be" (Flood & McAvoy, 2000:197). If pro-active (re)wilding practices are balanced with the ecosystem knowledge, reciprocity and pragmatism described by Higgs & Hobbs (2010), then the results will not be completely 'human design'.

10.4.3. Telos and the place of intervention

While the above sections provide some defence for interventionist (re)wilding practices, how should (re)wilding projects decide when these interventions are appropriate? The 'journey/endpoint' discussion marks the significance of *telos* to (re)wilding debates on this point. Where planting trees, for example, is used to '(re)wild' this is generally because nature is viewed as 'goal-directed' and associated with a particular trajectory. Management practices can, therefore, be evaluated as either working 'with' or 'against' nature's course (Glazebrook, 2003). While Fenton (2006) argues that 'no defined endpoint' is the essence of (re)wilding because nature is not teleological, in actual fact (re)wilding aspirations are more complicated than this because they are not straightforwardly about self-willed land alone (Chapt.9). In practice, an element of continuity with the past is important in understanding wild places in terms of juxtaposing them with cultural places (Section 9.6.2, Chapt.9) (c.f. Woods, 1998). But also, given that genuinely self-willed in the sense of 'hands-off' is not considered a serious option in places like Scotland, without this connectedness to nature's 'own plan', these interventions would be based on 'desired' future conditions alone (Callicott, 2002a; 2011; Marris, 2011).[9]

Of late, using natural range variability in wildernesss management has received considerable attention (see Sydoriak et al., 2000; Keane *et al.,* 2009). Two specific cornerstones of this concept are particularly important to justifying management interventions in (re)wilding discourses:

[9] While the novel ecosystems debate which has evolved in the past few years (see Williams & Jackson, 2007; Hobbs *et al.,* 2009; Perring *et al.,* 2014) questions are raised about whether there is any rationale for intervening at all. However, it seems unlikely that the point has been reached where the past is irrelevant (Landres, 2010).

(i) Past conditions and processes are important to understanding what future management should look like because, although dynamic, ecological composition and structure are "bounded over time" (Aplet & Cole, 2010:20)

(ii) Disturbance driven variability (both spatially and temporally) are vital to ecological systems (Landres *et al*, 1998; deBuys, 2008;

Where (re)wilding focusses on natural range variability it can recognise that ecological integrity will constantly change, but there are broad limits to the innate potential of natural systems which can be used to guide action (Fig.10.3). Because the concept does not focus on what wild places will look like after restoration, it encapsulates the 'process' emphasis in ecological integrity and the core of the 'future natural' idea as the past becomes the key to the future, but is not recreated itself. Given the contentious debate over restoring past conditions, this perspective therefore connects with recent discussions over the 'restoration' misnomer and the fact that 'redirection' in these novel 21st century environments might be a more appropriate expression (Davis, 2000; Cole, 2008; Cole & Yung, 2010). In some instances removing barriers to natural processes is enough to enable natural conditions to settle within the limits of natural variability, without intervention. However, given its significance in preceding discussions, 'rapid environmental change' is a crucial explanatory factor relating to the proactive, interventionist nature of some rewilding initiatives as they attempt to accelerate recovery. But, critically, natural range variability has management implications which set limits to appropriate intervention. Commentators like Marris (2011) argue that because nothing is pristine in this Anthropocene era there is no reason to limit intervention. However, where (re)wilding paradigms are focussed on historic range variability, action can be legitimised when necessary, but maintaining the symbolic significance of humility in wildlands is still the overriding philosophy.

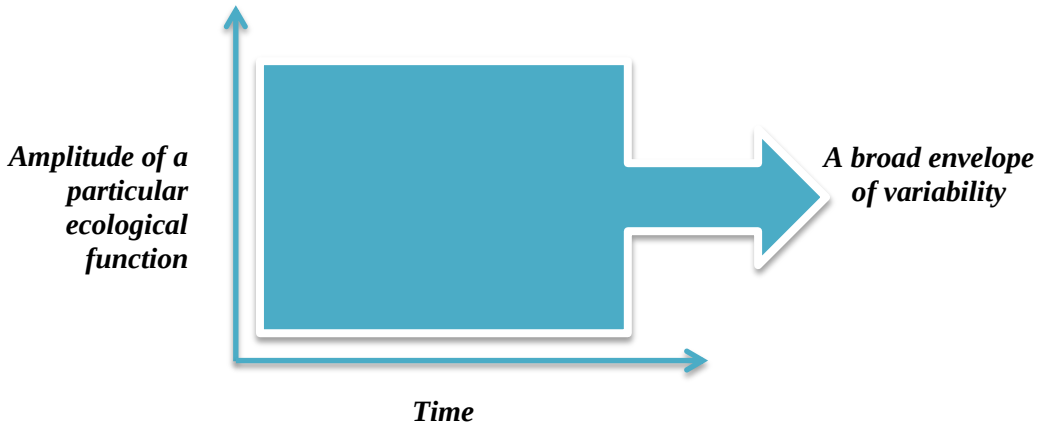


***Figure 10.3**: The concept of natural variability enables conservationists to think about ecological systems as dynamic, but equally acknowledge that natural history is important as it provides a historical context, an envelope for understanding the limits of change in contemporary systems.*

10.4.4 Continuums, pragmatism and considered interventions

It is widely accepted today that 'wild' and 'natural' are continuum concepts; all places have their 'most' wild and 'least' wild parts (see Nash, 1982; Grant, 1995; Angermeier, 2000; Machado, 2004). Equally, 'alteration' and degradation are by their very nature processes, not absolutes (Warren, 2009a). With so many continuums at its core, it makes little sense to be absolutist or purist about (re)wilding. To do so under-values the wild potential of cultural landscapes, and overlooks the potential for integrating the natural and cultural domains in a meaningful way (Section 10.5).

(Re)wilding founded upon dichotomies will invariably fall into the 'wilderness fallacy' (Section 10.4.1). This research therefore argues that continuums are important to (re)wilding paradigms because they overcome the nature/culture separation which leads to purist values. By rejecting this separation some commentators have reached a compelling defence of the paradoxes in environmental restoration (see Vogel, 2003; Light, 2000; Klaver, *et al.*, 2011). Importantly for this research, therefore, a continuum perspective means that, although naturalness and wildness may be diminished in degraded wildlands, what remains is not illusory or without value (Rolston, 1990). Equally, it acknowledges that, even though the result of rewilding is "unlikely to be true wilderness" (Fisher, 2004:8), the positive direction of the (re)wilding trajectory is important. Most critically, therefore, this kind of framing allows for the 'spectrum of wilderness quality' described by Ulvi (2001).

Viewing human intervention as a continuum is also important because it helps to make sense of the tension between minimal intervention and restorative action in (re)wilding discourses. Not all human impacts are of the same magnitude or sphere of influence (Rolston, 1990; Woods, 2005). Because interventions vary in intensity and duration, some practices can be considered 'more' or 'less' natural than others (Cole & Landres, 1986; Janzen, 1998; Landres, 2009b). Therefore, while Townsend (2006) argues that planting is no more artificial than the practices used to promote *natural* regeneration (e.g. scarifying, burning), this research suggests that the 'artificiality' of different actions can be assessed on a management gradient (Fig.10.4). Similar to America's 'minimum requirements analysis' (Chapt.5), this means that (re)wilding discourses can rationally balance the symbolic value of nature's autonomy with the need for action. Favouring management practices which mimic missing natural processes, for example, is considered important. As Midgley (2007:3324) points out, culling deer is human intervention, but by "becoming the surrogate wolf, the manager moves the system back towards a more natural arrangement". Following on from Chapter 9's applied example, therefore, in addition to the aesthetic implications, fencing is generally not favoured for deer management because it is relatively 'less natural' than culling, which is considered to be the closest option to non-intervention available in Scotland (Fig.10.5).

Management Gradient

More naturalness……..More intervention

Total non-intervention	***Culling deer only***	***Culling deer, tree tubes around some broadleaves***	***Culling deer and some ground preparation for seeds***	***Culling deer, preparing ground and sowing seed***	***Culling deer, preparing ground and planting saplings***

Figure 10.4*: Conservation Course (1988:22) in Midgley (2007:3323)*

- *Fencing excludes deer completely, but deer are a natural components of native woodland*
- *Fencing fragments ecosystems which is unnatural*
- *In the absence of any grazing the field layer becomes unnaturally dense and inhibits tree regeneration*
- *Fencing addresses the 'symptom' of overgrazing, but not the problem at a broader landscape-scale*

Figure 10.5*: The unnatural looking results of fencing on the Barisdale estate where overgrazing one side of the fence, and minimal grazing the other side, has resulted in defined lines and boundaries in the landscape. Photo © Holly Deary.*

Where wild quality is defined exclusively in contrast to human influence, technocentric efforts to restore it are paradoxical (Demillion *et al.,* 2000; Sydoriak *et al.,* 2000). Anti-intervention arguments view all human action as an unnatural force in the balance of nature (Gamborg & Sandøe, 2004; Gamborg *et al.,* 2010). But conservationists today generally acknowledge that 'disturbance' is a critical part of natural systems, and consider "human actions [to be] part of the web of influences on ecological change" (Adams, 1997:286; Callicott *et al.,* 1999; Havlick, 2011). From this non equilibrial

perspective, human action is just part of a constantly changing natural ecology, and nature and culture are not starkly opposed. With human culture settled within nature (the meaning of which is explored in Section 10.5) it is possible to talk of "intervening – adaptively and with humility – to facilitate the healing process" (Sydoriak *et al.*, 2000:89; Chapman, 2006). A critical point here is that human practices can arguably bring about more (perceived to be) 'natural' results than non-intervention sometimes. Non-intervention is not the completely natural solution that it is sometimes considered to be, because:

i. Non-intervention starts from the unnatural baselines of altered ecological systems
ii. The decision to not to intervene is still an intentional management decision determined by people (albeit with very different outcomes from active management) (Chapt.9) (Hobbs et al., 2010b; Rotherham, 2014)

From this perspective, principled interventions and non-intervention are not so far apart. Either way, the results will be 'eco-cultural' in the sense that they result from human decisions to manage, or not manage. As Hull *et al.* (2003) explores, and Chapter 9 supports, polarising intervention and preservation is not very useful, therefore. Doing so makes it difficult to account for the 'unnatural inheritance' associated with altered ecologies. Future value can only begin from profoundly altered starting points in palimpsest landscapes (Budiansky, 1995; Warren, 2009a). But when intervention is framed as a continuum, non-intervention simply becomes one end of the 'doing something' spectrum, as opposed to being antithetically defined as not 'not doing something', according to Townsend (2006). Therefore, while wilderness discussions have historically focussed on how wild quality is *lost*, the renewed wilderness framing explored above can shift the focus to how it *might* be accrued. And, where wildland values can be defined by their 'conservation *potential*' in this way, it may be possible to "determine the amount of cultural work that would be needed to fulfil the potential" (Gamborg *et al.*, 2010:71).

By rethinking preservationist wilderness ideology into a positive, future-oriented set of values, this research suggests there is conceptual space for 'creating new wildlands'. Table 10.2 summarises the key criticisms of creative conservation and some counter responses associated with this new framing.

Criticisms of creative conservation and how they relate to (re)wilding paradigms		*'Reframed wilderness' defence*
'The Replacement argument' (see Adams, 1996)	Creative conservation presents a serious challenge to the cultural engine of nature conservation by diluting efforts to preserve and conserve by presenting nature as easily replaceable and environmental degradation as less serious than is commonly assumed in traditional preservationist ideologies	From a future-oriented wilderness perspective, creative conservation puts nature back on a positive natural trajectory, rather than replacing it
'The Artefact Argument' (see Van der Heijden, 2005)	A restored, recreated natural environment is a mere artefact because nature is not simply physical matter, it is the subject of its own processes and history of development too	Where a strictly past-oriented view of wilderness is rejected, and only *some* causal continuity with the past is important, wilderness can describes future potential as much as present conditions (c.f. Vogel, 2003; Foreman, 2008)
'The Duplicitous Argument' (see Adams, 1996)	Technologically produced 'nature' might not be an adequate replacement for 'first nature' in either a biological or a cultural sense	No restoration could be a perfect reconstruction, or have that intrinsic value, but a diachronic 'means to an end' perspective considers restoration to be a more defensible option than leaving landscapes blighted and degraded (see Light, 2000)
'The Domination Argument' (see Katz, 2000a)	Restoration simply demonstrates the human propensity to manipulate, control and dominate natural environments as restorations accord with human desires and aspirations	The intrinsic value of nature can be at the core of restoration; in accordance with natural range variability, interventions are ultimately driven by aspirations to provide nature with the tools required for autonomy in the future (see Light, 2000, Arts, 2012)

***Table 10.2**: The common arguments against creative conservation and the ways in which a reframed diachronic wilderness perspective provides some constructive responses.*

10.5. Can a place for cultural heritage and people be reconciled with 'wildness'?

This new framing is also important for overcoming another significant criticism of wilderness ideology, namely that it finds no place for humans to live sustainably, erasing human histories and creating the illusion of pristine instead (Cronon, 2008; Bade, 2011). Does recalling human histories have to detract from the value of wild places? Does (re)wilding have to reinforce the separateness of people and wilderness? This research suggests that complex cultural landscapes provide the conceptual space needed to think about a covenant between wildlands and people.

Storied wildlands like Scotland's are both 'natural' and 'cultural' in unknown quantities. They therefore necessitate an open-ended interpretation of landscape history in which they are recognised as the product of nature/culture interactions over centuries (Feldman, 2011a; 2011b). Through the non-binary framing above, these ambiguous 'wild' and 'cultural' origins can be acknowledged.[10] Rather than compromising the sense of wildness, the depth of human history in Scotland's wildlands can be considered "a reinforcement of the richness of the landscape of that area" (SNH, 2002b:8; MacDonald, 1998; Toogood, 2003). Quoting this rich history in (re)wilding visions can therefore offer the potential to deepen people's connectedness with wild nature (see Feldman, 2011a; Cowley *et al*., 2012).[11] As cultural features and practices become naturalised in wildlands, their contribution to the sense of place means that they help to bring meaning to these otherwise ambiguous landscapes (Deary, in press). Ideas of local distinctiveness, place and time-depth are weighty concepts in restoration (see Clifford & King, 1993; Kaltenborn, 1998; Williams, 2002; Clifford, 2003; Higgs, 2003) and therefore have a significant role to play in future (re)wilding discourses too. In line with Havlick & Doyle's (2009) restoring 'geographies' – as opposed to simply nature - discussion, (re)wilding ought to be about 'place' as much as anything.[12] Aside from anything else, in Scotland in particular, including cultural artefacts like sheepfolds (as in SNH's Wild Land Areas Map (2013; 2014)) is politically savvy because it implies a 'presently empty' – and therefore *emptied* – rather than simply 'empty' view of the Highlands. It suggests 21st century wildness in 19th century cultural landscapes (SNH, 2011b) which is sensitive to the fact that (re)wilding is interpreted in some quarters as a re-enactment of the Clearances. Importantly, therefore, from a non-binary perspective, rewilding does not have to mean recreating a primordial land. Instead, historicity can be considered an important part of future (re)wilding aspirations as "people are joined to ecosystems through emotional connections, cultural ties and moral values" (Cole *et al.*,

[10] The natural integrity framing above has advantage over ideas of 'naturalness' in this regard because it does not require that every form of disturbance be removed (Miller & Ehnes, 2000; Woodley, 2010).
[11] See Toogood (1995) for a discussion of nationhood and wildlands, and Cooper (2006) for a discussion of significance of nationalism to nature conservation.
[12] Drenthen's recent project concerning a 'Hermeneutic approach to environmental ethics' will explore the need to *read* the landscape through (re)wilding projects and consider how this relates to issues of identity : see http://home.xmsnet.nl/drenthen/vidi-en.html

2010:130). Table 10.3 summarises the key arguments for this which have emerged throughout this thesis.

Why is historicity important in visions of (re)wilding?		
Human influence continues to shape wildland character today	Cultural heritage, including present management practices, arguably retain aspects of wild character – failing to understand this cultural dimension could potentially jeopardise the 'original' identity of wildland and therefore human affiliations with certain wild places	See Wigan (1991), Plumwood (2006)
Distinguishing natural from cultural heritage in hybrid landscapes is impracticable	The search for temporally or spatially relevant baselines for pre-settlement conditions is disorienting and necessitates arbitrary decisions over when the land ceased to be wild and natural. In this sense, efforts to remove all human influence would invariably result in features of conservation value being eroded	See Taylor (2004b), Crifasi, 2005)
Notions of 'emptied' landscapes are culturally sensitive	Wilderness in an un-historied sense can be offensive to local/ indigenous people who believe it undervalues their management and diminishes the reality of their presence	See Miller (1995), Toogood (2003), Crifasi (2005) Dudley (2011)
Cultural values can have a positive 'wildness score'	Simplistic narratives which deny human histories in wildlands drastically over-simplify the complex reality of the hybrid wildlands where the co-evolution of natural and cultural heritage has resulted in 'naturalised' human components in wildlands	See MacLaren, 2007; Wilson-Smith *et al.*, (2012)
Presenting wild places as ahistorical is romantic and fallacious	Obscuring historically and culturally significant events inscribes the nature/culture binary, and is deceptive (thereby bringing new meaning to ideas of 'faking nature')	See Cronon (1996a; 2008), Havlick (2006) Feldman (2011a)
Wilderness protection is a cultural decision guided by cultural values	Restoration is a human activity, and celebrating, rather than lamenting cultural history, goes part way to acknowledging that wilderness is intuitively cultural	See Clifford & King (1993), Adams (1996), McMorran *et al.*, (2008).

Table 10.3*: Key arguments for a place for historicity and cultural heritage in (re)wilding discourses*

One alternative to interpreting rewilding as (re)creating people-less landscapes is to view wild places as a "tribute to indigenous land practices" (Washington, 2007:446). Given that some wild places endure because of their human value and sustainable, traditional land use (Ulvi, 2001; Cowley *et al.,* 2012), a land ethic of humility and respect is what seems important in wilderness, rather than separation. In actual fact, viewing wilderness as people-less is increasingly cited as being a misconstrued interpretation of what the authors of the US Wilderness Act intended (see Hays, 1996; Cafaro, 2001b; Noss, 2003; Friskics, 2008; 2010).[13] Certainly the writings of great wilderness philosophers like Thoreau and Leopold (1949) do not speak to a land with no place for people (Havlick, 2006; Chapman, 2006; DeLuca, 2010).[14] Importantly, therefore, while there is a place for non-extractive areas like those called for by PanParks (2009), complex, humanised wildlands provide a greater opportunity for rethinking how people can live *as part* of wildlands. This research, therefore, argues against any view of (re)wilding which would lead to 'cultural severance', a concept which Rotherham (2013a) describes as the end of traditional, local and often subsistence management. Instead, it contends that practices like stalking (through traditional, sustainable means, e.g. with ponies, Fig.10.7) can contribute to the reframing of wildlands as lands in which humans belong by anchoring (re)wilding in the history and culture of these storied, palimpsest lands.

Mackenzie's (2004; 2006a; 2006b) ideas of 'working nature' are interesting in this regard as she suggests that through practices like tree planting "the spade disturbs the boundary between the past and the present by resisting the construction of 'wilderness' as lying 'outside human history'" (p.390). This perspective resonates with Abott's (2008; 2011a) 'phenomenological' view of human-wilderness relationships in that people become active participators, rather than passive spectators, or voyeurs, of wildland through such practices. Furthermore, the alternative is perhaps a seemingly more hedonistic relationship with wildland, akin to Monbiot's (2013a) description of a 'European Serengeti' to experience peril and overcome human ennui with the current ecology (Naeem, 2013). While the humility of the non-extractive perspective is honourable, recognising that people have custodianship after centuries of human impacts can demonstrate humility too (Rotherham, 2014; Mackenzie, 2006a).

[13] The passing of the Eastern Wilderness Act (1975) could certainly be interpreted as an indictment a misinterpreted 'purity' policy associated with the 1964 US Wilderness Act.

[14] Thoreau's idea that 'in wildness is the preservation of the world' is strong reinforcement of a nature inextricably linked with culture.

***Figure 10.7**: Traditional deer stalking with a pony. Photo © Rory Richardson.*

Critically, to acknowledge a human history in wildland is not to call into question its wildness; rather it is to break down entrenched dichotomies between wilderness/history and wilderness/civilisation, and to celebrate the stories which are important to how people connect with such places (MacLaren, 2007; Cronon, 2008:38; Peterson, 2008). Recognising the importance of local distinctiveness and place attachment in this way could overcome one of the most acute postmodern criticisms of wilderness: that it is a concept, not a place.

10.6. Conclusions and summary

Because traditional wilderness values involve "creating arbitrary boundaries across otherwise continuous human action" (Crifasi, 2005:267) they are unable to account for complex, cultural landscapes. They romanticise certain historical geographies and result in oversimplified restoration frameworks. Any (re)wilding strategy founded upon a purist conception of wilderness values will, therefore, dichotomise nature and culture and be challenged by hybrid places. Wilderness in a received sense can, therefore, only serve as a yardstick for failure as (re)wilded areas fail to meet its unhistoried standard. But, while thinking of human-influenced nature as 'unnatural' is anachronistic in these "post-polarity, postmodern, postnatural" times (Warren, 2007:440), the *idea* of wilderness is not completely obsolete. It is not the ethic of respect for non-human nature in wildlands which has been challenged in preceding chapters, it is its *terra nullius* framing and ahistorical, preservationist roots.

This chapter has, therefore, presented the more culturally learned and critically refined understanding of 'wilderness' at the core of Scotland's (re)wilding aspirations. Despite the lack of strategic direction to Scotland's wildland discourses in previous chapters, this research contends that the troublesome received wilderness idea has been (unwittingly) deconstructed by land managers who contend that its purist core is inappropriate for Scotland's 'cultural wildlands'. Instead of the contested idea of 'untouched lands', these (re)wilding aspirations are associated with a more positive framing of 'wild' which focusses on the potential for natural systems, ecological integrity and broad cultural values in the future. This renewed understanding accords with 21st century conservation thinking and postmodern narratives in several critical ways, namely that it:

- reframes wilderness in accordance with multiple causative factors and multiple potential future states, bringing it in line with postmodern perspectives on plurality
- moves beyond assumptions of unmodified reference conditions and continuity of how ecosystems function through time, thereby reconciling wilderness values with modern ecology
- acknowledges the altered baselines of cultural landscapes and recognises that wildlands can have complex hybrid geographies (see Whatmore, 2002)
- does not dichotomise people and nature, meaning that wildlands are not considered synonymous with no people (or no history)
- recognises a cultural dimension to wildland which offers the potential for finding a sustainable place for people in wildlands

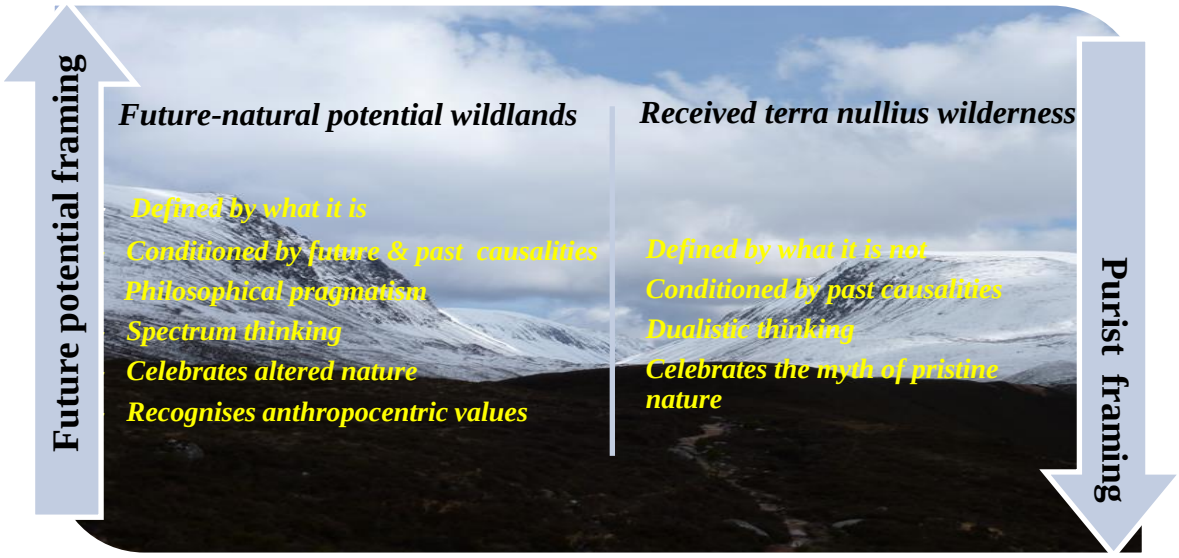


***Figure 10.7**: The differences between purist, terra nullius ideas of wilderness and a more 'potential future-natural' framing.*

Critically, while the more purist wilderness discourses of North America, for instance, continue to be challenged by the legacy wilderness myths, Scotland's history-laden wildlands have forced consideration of the place of human histories and have provided the "non-dualistic space" needed to rethink cultural-ecological relations (Ivakhiv, 2002:389).

Chapter 11

Summary of key findings and contributions: the future of (re)wilding in Scotland

11.1. Introduction

This research explored and critiqued (re)wilding discourses in accordance with the theoretical framework outlined in Section 1.2 (p.4). This short chapter summarises the key findings, and presents recommendations for the conceptual and practical development of the wildland movement.

11.2. The conceptual foundations of (re)wilding

i. (Re)wilding is a complex concept pertaining to multiple wildland discourses

Given the complex, multifaceted nature of goals like 'wild' and 'natural' at the core of (re)wilding visions, this research has shown that there are multiple routes to achieving a 'wilder Scotland'. (Re)wilding is not synonymous with, or defined by, one particular vision or management perspective. While academic literature presents (re)wilding as a distinct, and definitive, conservation paradigm (c.f. Sandom *et al.*, 2013a), in actual fact it is a broad spectrum of concepts associated with many different social representations of wildland. This is because (re)wilding discourses are socially constructed and culturally negotiated. Despite the importance of biogeographical definitions of wildland to its conservation, there is a fundamental emotional underpinning to (re)wilding (Drenthen, 2007; 2009; Dunn, 2009). In reality 'Mythos' (the root of poetry and story) and 'Eros' (passionately felt connection) are clearly as critical as 'Logos' (the logical and rational) to contemporary connections with the wild (McIntosh, 2002), and are thus equally important drivers of rewilding.

These 'cultures of conservation' are important because they guide weighty choices about which 'vision of wildness' should be pursued. As demonstrated in preceding chapters, these ideological frames consequently have significant implications for practical decision making. Beginning the search for a coherent wildland agenda should, therefore, begin with thoughtful consideration of how the 'wild' upon which (re)wilding is based is defined (Naeem, 2013).[1] The typology and vector matrix presented in this thesis provide the beginnings of a conceptual space within which to consider the multiple characterisations of (re)wilding.

ii. The framing of (re)wilding discourses and the socially constructed perspective

Despite the fact that these cultural frames are significant drivers of (re)wilding, they have received little attention to date (Taylor, 2004a). But, acknowledging the socially constructed

[1] Failing to fully consider the 'wild' in a 'wilder future' will likely result in frustration amongst wildland advocates as "policies that designate sheep pasture as 'wilderness' or promote tree removal as 'wilderness management'" are legitimised (Naeem, 2013: 436).

nature of wildland narratives is critical to a conceptual defence of rewilding; if nothing is absolute in wildland then understanding these cultural lenses is the only way to make sense of practical decision making. Accepting the culturally derived nature of wildland discourses allows these processes of social negotiation to be acknowledged and intelligently deliberated (c.f. Vogel, 1996; Bryan & Bailey, 2005). Furthermore, one danger of not incorporating these human values into wildland discourses is that (re)wilding practices could inadvertently diminish feelings of attachment to specific places. Given that its relevance to society has been a critical discussion point of (re)wilding, failing to attain clarity over these cultural dimensions could hinder the potential for healthy relationships between people and land. A social constructivist perspective will, therefore, offer valuable insights into these culturally contingent discourses.

iii. Occupying the middle-ground between realism and social constructivism

This said, a purely constructivist position is inappropriate. Ideas of a (re)wilded, self-willed ecology have existence quite apart from human interpretations and values (c.f. Dudley, 2011); nature does endure beyond human frames of reference, and "in this lies its vital wildness" (Adams, 1996a:103). Completely rejecting the distinction between nature and culture would ignore the cogent biogeographical arguments for large, autonomous natural areas and would undermine the very concept of wildland conservation by rejecting the foundations of the environmental movement (c.f. Irwin, 2001). However, the point that this research makes is that this natural processes rhetoric (i.e. its 'vital wildness') is sometimes paralysed by concurrent expectations of what the landscape *ought* to look like. This space between constructed and realist 'wilds' is complex, meaning that, in practice, the coherence of (re)wilding efforts depends on the ability to view wildland as both a biophysical *place* and a cultural *ideal*. Therefore, while constructivist arguments are often assumed to deconstruct wilderness (Demeritt, 1996; Lockwood, 2009), the intention here is not to decry the worthiness of (re)wilding, or indeed to distract from the practical restoration of wildland. Instead, it is to contend that the (re)wilding effort can be strengthened by incorporating these 'cultures of wildness' into the development of robust wildland policy and discourse. As conservationists edge towards a future wildland agenda, 'wildland' will be best conceptualised as both biophysical and social nature. The challenge facing rewilding initiatives is therefore to understand these interactions between environmental conditions and human attitudes/values (cf. Aitken, 1999).

11.3. The Normative underpinnings of (re)wilding

i. (Re)wilding in cultural landscapes and overcoming conceptual paradoxes

A number of conceptual paradoxes are implicit in the idea of (re)wilding. However, by exploring the ideological framing of (re)wilding discourses, this research has described how a more postmodern positioning can help to resolve these dilemmas. For the most part, the 'wild' in Scotland's wildland discourses connects with postmodern narratives about space, place and nature more than it does traditional, received wilderness values. While historically,

human-nature relationships in wild land have been characterised by separation (c.f. Rolston, 1991), this profound oversimplification of a complex reality has been renegotiated in Scotland's wildlands where the altered starting points and conflicting land-uses demand a more pragmatic perspective. Rather than utopian ideas of wilderness, Scotland's (re)wilding movement connects with a more earthed interpretation of the 'wild', one which resonates Arts (2012:10) description of contemporary wilderness as a "reinvigorated manifestation of the older concept [which] entails a physical change of the land and an alteration of people's relationship with the land". The paradoxes which are so apparent on first consideration of the (re)wilding concept are thus far less paradoxical when the lens of a 'postmodern wildlands' idea is applied (Table 11.1).

Rewilding myths (connected with the received wilderness idea)		*Thinking in practice (connected with a postmodern wildlands idea)*
i.	*(Re)wilding aims to (re)create pristine wilderness*	• Given the pervasive effects of modern humans, no part of the world is pristine • Wilderness is not history-less
ii.	*(Re)wilding is trying to turn the clock back and restore conditions prior to human settlement*	• It is impossible to move an ecosystem backwards or to maintain a particular point in time – (re)wilding enables a 'future-natural' • Wild places in the future should be autonomous and change according to their own agenda
iii.	*People are not part of (re)wilding visions*	• Wilderness is socially constructed and its management is strongly influenced by social values • Heritage values are an important part of wilderness character
iv.	*(Re)wilding is about trying to get a balance in nature*	• There is no balance of nature because disturbance is natural • Ecological systems vary across space and time • Future conditions will be unpredictable and unprecedented

***Table 11.1**: Where (re)wilding is assumed to be founded upon a purist, received wilderness ideology it becomes connected with a number of myths which do not accurately encapsulate the nature of (re)wilding initiatives in practice. In reality, many (re)wilding initiatives connect with a postmodern wildlands idea which undermines these myths.*

ii. Conceptual advantages of viewing wildland as a complex cultural landscape

Therefore, in a similar vein to Ulvi (2001), this research demonstrates that there are conceptual advantages to viewing wildland as a complex cultural landscape, namely that:

- It forces the rejection of persistent colonial representations of wild places as 'untouched'
- It focuses attention on the nature conservation value of wildlands, rather than on their history
- It forces society to consider how to live sustainably within the limits of the environment, rather than apart from it, and has the potential to recognise the role that traditional knowledge and practices can play in understanding this

Explicitly building these cultural roots into the framing of wildland moves wilderness discourse beyond purist dualisms. Consequently, (re)wilding in this sense is less vulnerable to constructivist critiques than is the received wilderness idea. Perhaps most importantly, as Section 11.4 details, in practical terms, framing (re)wilding in this way offers the greatest potential for making 'wildness' a part of broader land-use strategies for Scotland's uplands.

iii. Developing a more sophisticated language of terms

This said, in accordance with the partially social constructivist framing above, this research contends that maintaining some distinction between nature and culture is important to ensuring the perpetuation of wild nature. Therefore, contrary to some commentators who favour the abandonment of loaded, dichotomising terms like 'natural' and 'wild' (see Ridder, 2007a), this research suggests they continue to have some mileage (cf. Plumwood, 1993; 2006) because people are not a completely inseparable part of Scotland's postmodern (re)wilding narratives. Moreover, terms like 'historical landscapes' and 'cultural landscapes' could be immensely valuable in that they encourage conservationists to incorporate lessons from cultural, social and economic histories into future conservation efforts (Smout, 1997). Developing a more sophisticated language of terms like 'cultured naturalness' and 'storied wilderness' in the future could, therefore, enable more dialogue about the complexity of society's relationship with wildlands.

11.4. The practical corollaries and a (re)wilding prognosis

As wildland initiatives and conservation organisations like SNH and JMT begin to think about (re)wilding in a strategic, policy sense, this research raises some important practical questions:

- What are the implications of these different 'geographies of wild' for policy discussions (e.g. as ideas of a 'wildland designation' are pushed forward, how can the complexity of wildland discourses be encapsulated?)

- How should the different vectors of wildland quality be prioritised when they come into conflict with one another (e.g. what place is there for the historic, cultural landscape in relation to ecological change in future wildlands?)
- How can national strategic thinking (e.g. in terms of ecological corridors and networks) be integrated with more localised place-based narratives?
- How should the practical implications of relativism be played out on the ground (e.g. who decides what will be (re)wilded and how it will be (re)wilded?)

Combining these practical questions with the key conceptual and normative findings of this research enables a set of key recommendations to be identified. These seven recommendations, which are relevant for (re)wilding initiatives, practitioners and policy makers alike, are listed below.

i. Embrace multiple meanings

As Scotland's (re)wilding profile grows, organisations like 'Rewilding Britain' increasingly seek to define and quantify its meaning. But, instead of constraining (re)wilding to one particular meaning or outlook, this research contends that multiple social representations and dimensions should be embraced. In reality, securing multiple benefits for wildland will require ongoing consideration of how this diverse range of wildland vectors interacts with one another. Incorporating the complexity of wildland discourses into future policy is, therefore, critical. Efforts to frame (re)wilding from one viewpoint, or in accordance with one particular wilderness attribute, will result in an inevitable loss of meaning and value, and may obstruct opportunities to embrace a broader set of wilderness values. Avoiding a single paradigm for (re)wilding will allow wildland initiatives to recognise the plurality of relationships between people and places. By embracing the culturally determined character of (re)wilding discourses as above, the heterogeneous nature of wilderness values can be incorporated within (re)wilding rhetoric.

ii. Case-specific decisions

Therefore, rather than straitjacketing (re)wilding with broad-brush principles or frameworks, this research stresses the importance of situation-specific decisions and judgements to making defensible decisions about 'future nature'. Inevitably, different approaches and perspectives will be more or less appropriate in different situations. But if nothing is absolute in wildland then there are no 'right' or 'wrong' decisions; there are only informed, considered and intellectually honest decisions. Context is all. As Townsend (2006:18) comments, "there are occasions and circumstances when tree planting might be regarded as the 'good' choice and others when it might be regarded as the 'bad' choice". By accepting the idea of multiple 'wildland' states, (re)wilding approaches can be endogenous and situationally dependent, rather than 'right' or 'wrong' (Havlick, 2006). Acknowledging the culturally negotiated nature of wildland narratives in this way will not provide the answers to the questions

outlined above, but it will provide the tools for "constructive conversations with people of different outlooks" (Cooper, 2006:121).

iii. Trade-offs and issues of robustness

Case-specific decision making will allow wildland initiatives to acknowledge the co-existence of conflicting mandates and, therefore, to talk robustly about how these wildland axes might be traded-off against one another. Understanding the range of objectives associated with different wildland vectors improves the chances of minimising conflict and maximising value when discord over wildland enhancers and detractors arises. In this sense, what is lost and gained through different approaches can be weighed in an informed way (e.g. consciously compromising a wild aesthetic for a purported improvement in natural ecology through temporary fencing until saplings are above browsing height). Unless or until a fundamental underlying philosophy for wildland has been widely accepted (which seems a distant prospect at best), case-specific, robust and intellectually honest decisions and trade-offs are the only truly defensible approach available.

iv. Avoid exclusively scientific approaches

Given the significance of the social dimensions of (re)wilding and locally-specific decisions to the discussion above, the scientific prescriptiveness associated with some (re)wilding initiatives is concerning. Rational and technical discourses alone fail to capture the complexity of multi-layered landscapes (Jacobs & Mulvihill, 1995:16; Proctor, 1998b) and result in particular visions of wildland being privileged over others without proper justification. Therefore, while recent GIS attribute mapping methods have a strong contribution to make to international wilderness debates (cf. Carver, 2005; Comber *et al.*, 2010; Carver *et al.*, 2013), there is a danger that they could result in narrowly defined, and dogmatic, wildland definitions which ignore the importance of local dialects of nature to environmental restoration (cf. Thrift & Whatmore, 2004). Exclusive reliance on science can be counter-productively excluding.

v. The potential of participatory research

In practice, this means encouraging land managers to deconstruct their visions, motivations and actions more readily. The reluctance amongst practitioners to acknowledge the emotional underpinnings of conservation work for fear of jeopardising its legitimacy has been widely remarked upon (Russell, 2007; Oates, 2008; Trudgill, 2008). Consequently, it is not surprising many wildland initiatives find the idea that 'natural' is not only a physical state heretical. However, encouraging land managers and conservation organisations to engage in the philosophical facets of conservation discourse is important because of the direct linkage with goal-setting and decision making.

Participatory research like this, whereby practitioners are encouraged to be reflexive, is a productive starting point. In accordance with a growing literature on knowledge exchange and transfer (cf. Gross, 2006; Glass *et al.*, 2013c; Fazey *et al.*, 2014), this research demonstrates the potential for collaborative and discursive practitioner-based discussions to contribute to a robust, refined understanding of conservation issues. Practitioners may be reluctant to engage in these philosophical dimensions, but the largely positive reactions to this research process (Appendix XIV) suggest that this kind of forum could have a role in understanding value-laden decision-making processes in the future.

vi. Close the gap between theory and practice

Working closely with practitioners also offers the potential for overcoming the disconnect between perceptions of (re)wilding in Scotland and on-the-ground realities. While (re)wilding is commonly accused of attempting to resurrect a Romantic Eden, this research presents a far more robust, defensible vision for rebuilding healthy ecosystems for the future from altered baselines. More dialogue with practitioners offers the potential to overcome misconceptions of (re)wilding, and to recognise the significant contribution that practitioners have to make to the conceptual debate. [2]

vii. Pragmatism & lessons from Scotland

Pragmatism in wildland framing is important, not only to realising the potential for (re)wilding to deliver multiple objectives, but also to integrating it into a broader, multi-functional land-use strategy for the uplands. In reality, no-one in Scotland is suggesting that the results of (re)wilding will be 'pure'/'true' wilderness. Instead, as Drenthen (2007:393) argues, wilderness in these postmodern times "does not refer to an objective wilderness as pristine or primal nature, but it is primarily a relative moral concept". As the ambiguous, hybrid wildlands of Scotland challenge traditional wilderness ideology, a more robust, postmodern basis for (re)wilding has evolved. Consequently, despite the fact that wilderness has not had the same ideological significance historically as in the USA, Scotland has a significant contribution to make to internationally emerging (re)wilding debates; "what we do here could have global resonance, if we are bold enough" (Taylor, 2009:55).

[2] It is interesting that when commenting on the types of people present at a recent UK based workshop on rewilding issues, Rotherham (2014) notes that many of the 'on the ground organisations' were absent.

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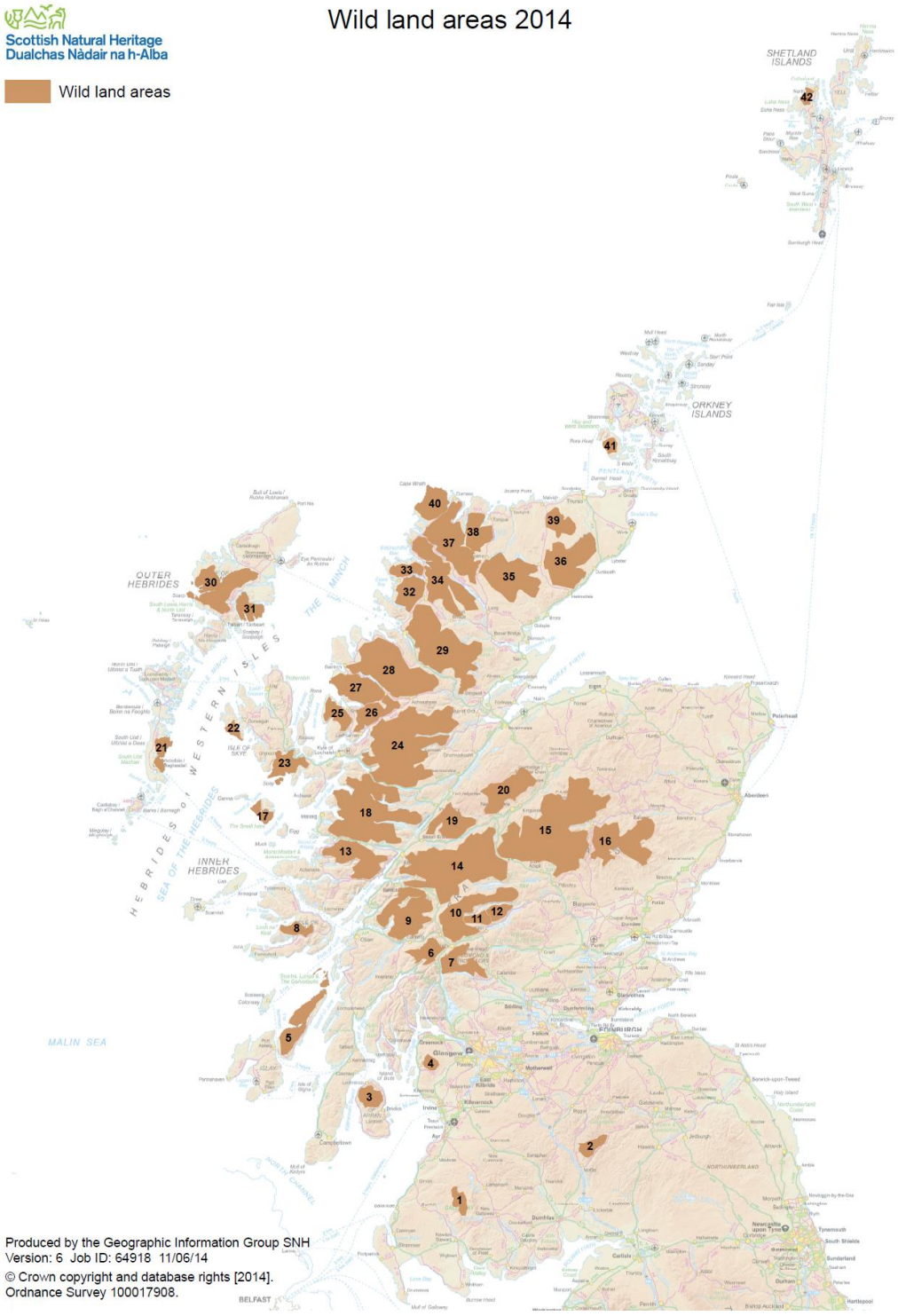
Appendices

Appendix I: SNH's Wild Land Areas Map (published June, 2014)



Appendix II: Letter of invitation to non-private wildland projects[1]

Dept. of Geography & Sustainable Development,
University of St Andrews,
North Street,
St Andrews,
Fife,
KY16 9AL

Managing Scotland's Wild Land

[Date]

Dear [……..],

I am writing to ask you to consider participating in a research project which is examining wild land management strategies in Scotland, with particular reference to the concept of rewilding. This research is being conducted as part of my Doctoral research project within the Department of Geography and Sustainable Development at the University of St Andrews, under the supervision of Dr Charles Warren. I am approaching you because you are a manager of wild land in Scotland. I would like to invite [……..] to take up a place on a discrete, and anonymous, panel of experts which will inform and guide this research.

Rewilding, with its emphasis on enhancing wildness and promoting natural processes, has clearly caught the public imagination and is being increasingly adopted as a land management strategy both in Scotland and overseas. However, while many wild land projects are adopting rewilding strategies each one appears to be working to its own core objectives; for this reason, there remains no widely understood or agreed interpretation of what it means to 'rewild' a landscape. This research will investigate these diverse understandings, and explore the objectives and motivations of rewilding projects. A key aim is to establish a classification of wild land strategies based upon levels of management and alteration of natural processes, thereby providing a common framework.

The 'expert panel' which I am inviting you to join will participate in a 'Delphi process'. This is a structured and interactive communication technique which gathers and develops expert insight. Participants in this process typically find it a stimulating and eye-opening exercise. If you choose to participate, I would naturally give you full

[1] A similar, but slightly tweaked letter was sent to private landowners

information about what's involved. However, in outline I would initially like to set up a meeting with an individual from [……..] – or two or three individuals together – to gain an understanding of your wild land management ethos. This interview need not take more than an hour.

Thereafter, a further two interviews will be undertaken during the following 12 months, exploring key themes surrounding wild land management. Discussion will centre on defining rewilding, wild land, wildness and wild character, levels of intervention and management, and practical management strategies. A specific focus will be the implications of wild land management strategies for red deer management, one of the most contentious issues in the uplands. Between interviews you will receive an anonymous summary of the points and issues raised by others on the panel. This will allow you to see the perspectives, rationale and judgements of other wild land managers across Scotland. You will be asked to reflect on this brief summary.

I am confident that, as a manager of wild land, you will find this process both interesting and thought-provoking. It presents you with an opportunity to contribute to a research project which aims to inform wild land policy in Scotland. If you are kind enough to participate then you are, of course, free to withdraw at any time.

If you have any queries whatsoever, or you would like more information before considering participating, then please do not hesitate to contact me via the contact details below.

Thank you very much for taking the time to read this, and I will hope to hear from you.

Yours sincerely,

[Researcher's signature]

[Direct contact details]

Appendix III: Anonymity letter extract

The following is an extract from a letter sent to all panellists and concerns the issue of anonymity during this research processes.

[There is one particular issue which I need to ask you about at this stage; anonymity. This is a central component of the Delphi process. Delphi acts as an anonymous forum in which panellists should feel that they can express their opinion freely and openly without confrontation. However, in the context of environmental and upland management, ensuring complete anonymity is challenging. 'Land management' is a relatively small sector in which the approaches and innovative management practices of specific estates and projects are often common knowledge. At no point in the anonymous summaries between Delphi rounds will any member of the expert panel be identified. However, obvious clues may emerge; for instance the size of the estate or the estate's specific management measures.

Equally, several of the panellists have expressed keenness to know which other estates are involved. In the context of this research it seems clear that a shared knowledge of the range and diversity of perspectives involved could be advantageous. A possible way of allowing everyone to know who is involved, while retaining anonymity in terms of protecting precisely who said what, is to compile a list of panellists which is distributed at the start of the process but which is not referred to in the synthesis reports. This way panellists would know who else was involved in this research but not the source of specific statements. If you could let me know if you are happy with this arrangement I would be very grateful.]

Appendix IV: Q-methodology statements

Statements employed during Q-methodology exercise	
1.	Reintroduction of extirpated species
2.	Restoration of native woodland through natural regeneration
3.	Restoration of native woodland through planting
4.	Promoting natural processes
5.	Retaining or enhancing biodiversity
6.	Eradicating non-native species
7.	Establishing ecological connectivity with surrounding land
8.	Using palaeological indicators such as pollen profiles in future management
9.	Ensuring ecosystems are adaptable in the face of climate change
10.	Maintaining high profile species and habitat in favourable condition
11.	Enhancing the sense of wildness from an experiential perspective
12.	Removing human artefacts
13.	Ensuring visual intrusions are minimal
14.	Promoting a picturesque quality in the landscape
15.	Providing a sense of adventure for recreationalists
16.	Providing and managing infrastructure for visitor management, i.e. paths
17.	Supporting traditional land management practices such as crofting
18.	Providing sporting opportunities, i.e. stalking, grouse shooting
19.	Protecting the cultural heritage of the landscape
20.	Ensuring the land is productive
21	Managing for ecosystem services
22.	Employing pragmatism in management
23.	Promoting ecotourism and encouraging visitors
24	Integrated land uses
25.	A sustainable future
26.	Environmental education
27.	Promoting people to foster more pro-environmental behaviour
28.	Enhancing the quality of ‘naturalness’
29.	An ‘authentic’ landscape
30.	Historical accuracy in landscape character
31.	Managing for ‘nativeness’
32.	The intrinsic value of nature

Appendix V: Letter of ethical approval

University of St Andrew

University Teaching and Research Ethics Committe

School Of Geography And Geoscience

26 May 2011
Holly Angela Deary
Geography and Geosciences

Ethics Reference No: *Please quote this ref on all correspondence*	**GG7570**
Project Title:	Return of the Wild? Evaluating the primary fault lines in the practical application of rewilding in Scotland
Researchers Name(s):	Holly Deary
Supervisor(s):	Charles Warren

Thank you for submitting your application which was considered by the Geography and Geoscience School Ethics Committee. The following documents were reviewed:

1. Ethical Application Form — 25 May 2011
2. Participant Information Sheet — 25 May 2011
3. Participant Consent Form — 25 May 2011

The University Teaching and Research Ethics Committee (UTREC) approves this study from an ethic point of view. Please note that where approval is given by a School Ethics Committee that committe is part of UTREC and is delegated to act for UTREC.

Approval is given for three years. Projects, which have not commenced within two years of origin approval, must be re-submitted to your School Ethics Committee.

You must inform your School Ethics Committee when the research has been completed. If you ar unable to complete your research within the 3 three year validation period, you will be required t write to your School Ethics Committee and to UTREC (where approval was given by UTREC) to reque an extension or you will need to re-apply.

Any serious adverse events or significant change which occurs in connection with this study and/ which may alter its ethical consideration, must be reported immediately to the School Ethi Committee, and an Ethical Amendment Form submitted where appropriate.

Approval is given on the understanding that the "Guidelines for Ethical Research Practic (http://www.st-andrews.ac.uk/media/UTRECguidelines%20Feb%2008.pdf) are adhered to.

Yours sincerely

Dr. Sharon Leahy
Convenor of the School Ethics Committee

UTREC School of Geography and Geosciences Convenor, Irvine Building, North Street, St Andrews, KY16 9AL
Email: ggethics@st-andrews.ac.uk Tel: 01334 463897
The University of St Andrews is a charity registered in Scotland: No SC013532

Appendix VI: International respondents and coding

International Respondent Coding	
American Respondents	
Conservation Director for the Montana Wilderness Association	*US1*
Yellowstone National Park Vegetation and Resource Operations Chief	*US2*
Yellowstone National Park Division Chief	*US3*
Yellowstone National Park Backcountry Manager	*US4*
Yellowstone National Park Historian	*US5*
US National Parks Service Wilderness Stewardship Advisor	*US6*
Conservation Director for the Greater Yellowstone Coalition	*US7*
Prof. natural resource social science, University of Montana	*US8*
Aldo Leopold Wilderness Institute Researcher	*US9*
Aldo Leopold Wilderness Institute Researcher	*US10*
Executive Director of Wilderness Watch	*US11*
New Zealand's Respondents	
Prof. in wilderness issues, University of Lincoln	*NZ1*
Biodiversity Programme Manager, Department of Conservation	*NZ2*
Area Leader, Department of Conservation	*NZ3*
Biodiversity Ranger, Department of Conservation	*NZ4*
Fiordland Wapitit Foundation	*NZ5*
European Respondents	
Wilderness Tourism Operator (SNP Natuurreizen) Director	*EU1*
Archipelago National Park, Metsähallitus, Park Superintendent	*EU2*
Senior Natural Heritage Advisor to Metsähallitus	*EU3*
Senior Planning Officer for Metsähallitus	*EU4*
Transboundary Park Co-ordinator, Metsähallitus	*EU5*
Rewilding Europe Advisor	*EU6*
Naturalists Club, Poland	*EU7*
PANParks Conservation Director	*EU8*
PANParks Director	*EU9*
Retezeat National Park Superintendent, Romania	*EU10*

Appendix VII: Whitebark Pine: the 'perfect storm' in wilderness debates

The future of North American whitebark pine (*Pinus albicaulis*) is a critical wilderness dilemma. This iconic species is currently in decline across its native range as a result of a non-native white pine blister rust (*Cronartiumribicola*), a native mountain pine beetle (*Dendroctonuspondersoae*) and climate change. This keystone species is critical to defining high elevation ecosystem structure, function and process and provides many valuable ecosystem services (Keane, 2000). However, perhaps the most canvassed argument for action to halt and reverse this decline is because of the value of whitepark pine to a single species; the grizzly bear.

In response to its deteriorating status, land management agencies and NGO conservation bodies have been extensively discussing options for the future protection and restoration of whitebark pine. Actions to prevent further mortality include the use of a pesticide (*carbaryl*) and the application of synthetic pheromone patches (*verbenone*) which are considered 'low impact operations'. 'Higher impact operations' might include planting resistant tree seedlings or mechanical thinning (Greater Yellowstone Co-ordinating Committee, 2011). The Whitebark Pine Strategy for the Yellowstone area places significant emphasis on the need for gene conservation by cone caging and scion collection, with the longer term vision being to establish an orchard stock of trees which are identified as resistant to these pathogens. These cultivated trees will then be strategically planted.

But, with half of its range in wilderness, active manipulation to restore this species is controversial. Any silvicultural management is strictly prohibited in wilderness. However, not employing these mechanical interventions and treatments will compromise the natural conditions perspective of the Wilderness Act. Defining what is an acceptable, and unacceptable, level of intervention in this wilderness debate is consequently contingent upon the outcome of the minimal requirements analysis.

Minimum Requirement Analysis: is action necessary	
1.	*Is alteration clearly due to human influence?*
2.	*Is there no reasonable expectation of natural restoration? (i.e. is the management intervention a last resort?)*
3.	*Is there reasonable expectation that the restoration will be successful?*
4.	*Can the restoration objective be accomplished outside of a wilderness area?*

While the minimal requirements approach provides a logical starting point for decision making, the reality of climate change challenges its simplicity. The blend of natural and

non-natural causative factors provides a deeply challenging management context. The mountain pine beetle, for instance, is subject to two arguments; i) that its nativity and co-evolution with the trees make it just another native disturbance, like fire, ii) the naturally episodic behaviour of the beetle has been more sustained recently as a consequence of anthropogenic influences and climate change. Furthermore, the science provides little conclusive guidance in that there is some evidence that beetle infestations are aggravated by climate change and some evidence that they are, in fact, not. Consequently it is evident that there could be far more interactive and synergistic causes behind the decline of whitebark pine which shackle the minimal requirements analysis. Without proactive intervention whitebark pine is heading towards its demise. However, considered and defensible restoration interventions are muddied by shades of grey. The challenge of managing wilderness in a 21st C context are embodied in this interface between pine beetle, blisterus, natural fire and climate change and are causing wilderness managers to consider hard the place of restoration in wilderness (see Cole, 2003).

Appendix VIII: Round 1 Delphi Synthesis (distributed to panellists with cover letter)

Delphi Round 1 Synthesis: Feedback document

What is this document?

The first round of interviews with the 17 estates which comprise the panel for this research is now complete. This document presents a summary of these discussions and details the key challenges and issues raised by the panellists concerning the recently emerging practice of 'rewilding', and managing Scotland's wild land more generally.

Illustrative points on the following discussion themes below are presented, and you are invited to respond to any points as you wish, such as commenting on whether you agree or disagree with the points and why. Dialogue boxes are provided to aid you with this. Anonymous quotes are used to support points. This is, of course, simply a summary of these discussions and not an exhaustive overview.

Delphi Round 1 discussion themes:

Visions for wild land
The meaning of wild land: enhancer & detractors,
The meaning of rewilding,
Practicing rewilding ,
The coherence and relevance of rewilding to Scotland,
Sustainable landscapes

Summarising the key points.....

Rewilding is a controversial term in the Scottish Highlands. It is viewed as diffuse, meaningless and radical. It is understood to oversimplify the complexity of a landscape shaped by thousands of years of interaction between humans and the environment. Rewilding is most commonly associated with abandonment and allowing vast tracts of land to operate under natural processes. For this reason it is viewed as an uncompromising 'all or nothing' term which ignores the fact that the Highlands are a living, working landscape which has already been pervasively altered beyond its 'wild' starting point. 'Rewilding' may be viewed as inappropriate for Scotland, but nevertheless, there is clearly a growing emphasis on 'managing for wildness' in Scotland's environmental agenda. 'Enhancing wildness' might be a more accurate description of this aspiration for encouraging native woodland restoration, removing human artefacts and restoring landscape degradation, which is far less radical than returning lost species and subsequent abandonment which is believed to define 'rewilding'. Rather than the 'minimal intervention' associated with rewilding, this Scottish emphasis on wildness is more commonly associated with active intervention to restore this landscape quality. The need for pragmatism in managing for wildness in the Highlands was almost unanimously supported given the cultural heritage that characterises this working landscape and the sensitivities associated with a history of 'clearance' and 'sterilisation'.

Section 1: Understanding approaches to managing Scotland's wild land

i. Preventing further loss of wild land.....

Panellists were asked to consider their visions for the future of the wild land they manage and the dominant ethos and management aims which guide this vision. While one respondent felt that referring to 'managing wild land' was oxymoronic because 'wild land' is by its very nature out of human control, the majority of panellists stated management aims and objectives which are sympathetic to this quality of wildness. Protecting wild land, and preventing any further reduction of its extent or quality is the primary concern.

ii. Restoring wildness....

The general consensus amongst panellists is that the Highlands are a degraded landscape. Restoring vibrancy to Highland ecosystems is therefore identified as a priority. Many

panellists believe that conservation over the past few decades has been too static and has not allowed ecosystems to develop as the dynamic, every changing assemblage of species that they are. A number of the upland estates involved in this research – including private, NGO and community owned – are therefore now 'managing for wildness'.

> *"[aiming to...] to re-create....an extensive tract of mainly forested wilderness"*

iii. Restoring 'wild land'....

The significance of the distinctly Scottish 'wild land' terminology was a key discussion theme. Panellist's understanding of 'wild land' was clearly central to their overall vision for their estate. As a number of panellists pointed out, wild land is a multi-faceted term, but from a policy perspective it lays significant emphasis on the 'landscape' qualities of wildness and this is evident in the approaches used to restore Scottish wild land. This landscape emphasis concerned a number of panellists who believe that wild land policy is too planning orientated and does not give ecology a central enough role.

> *"Wilderness and wildlife and nature conservation are really well down the agenda, and I think this has to change"*

Others defended this landscape emphasis, stating that inappropriate planning developments represent the greatest threat to wild land.

> *"The reason we're seen quite a lot as [...] concentrating on the visual side of things is because that's the thing that's most under threat at the moment"*

The general lack of many land managers' understanding of basic ecology concerned other panellists greatly, while this arbitrary distinction between the landscape emphasis and nature conservation worried others. Many panellists called for a more integrated approach which acknowledged the relationship between physical processes and landscape character.

iv. The current thrust in Scotland's wild land....

Panellists were in agreement that the current thrust is towards restoring a landscape with minimal human impact, increased woodland cover, increased montane scrub, increased riparian woodland and an enhanced sense of wildness. This emphasis was well encapsulated by one respondent's description of 'revival of the land'. Placing greater emphasis on natural processes and moving away from the prescriptive nature of past conservation approaches were identified as key drivers. For a number of panellists, their vision is one of withdrawing management.

"It's about making these places less managed"

In spite of these common themes not all panellists were motivated by the same vision. For some panellists the vision was concerned with nature conservation and re-establishing a semi-natural woodland with high biodiversity, ecosystem function and resilience. For some of these land managers this was with a view to possibly reintroducing species at a later date.

"[...] we will never have healthy, functioning ecosystems until all the species are back in place....particularly species which fulfil a key role, and by that I'm thinking particularly of top predators because that's a function that's totally absent [...]"

For other panellists the vision was more concerned with the landscape and the experiential quality of wildness that humans might encounter in that landscape. For instance, they might have been more concerned with removing intrusive infrastructure, restructuring plantations and restoring the 'sense of wildness'.

"....[path restoration] to combat the worst excesses or erosion where you were getting significant erosion and paths had been worn into the steep slopes to the extent that they were beginning to create very obvious scars on the landscape"

For some, their management aims and objectives are about both; an ecological vision with landscape aesthetics incorporated.

A number of other panellists explained that this aspiration for 'wildness' is actually more of a socio-economic decision than an ecological or landscape one; wild landscapes deliver more ecosystem services and therefore managing for wildness has a business argument to it.

"I can see why rewilding would sweep up a whole lot of things to do with cost effectiveness"

"...with 2.5 billion tonnes of carbon stored in the peatlands they're the most precious

Two other panellists questioned this position;

"I don't think I've seen the evidence to suggest that their approach ['managing for wildness'] is going to deliver more or better ecosystem services"

For one respondent, rewilding offered an opportunity to restore vibrancy to the Highlands in the face of current decline in the viability of upland industries like sheep farming.

> *"Given that a lot of it is subsidised anyway you could subsidise for maximum environmental benefit as opposed to just headage payments or whatever"*

Despite these varied interpretations, the general ambition to enhance the sense of wildness is clear. But, 'wildness' is such a subjective term that approaches for doing so are interpreted in very different ways. Therefore, despite the fact that many of the panellists are moving towards enhancing and restoring wild land, this broad objective does not arise from shared motivations or goals.

Comments.....
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Section 2: What does rewilding mean to land managers in Scotland?

Panellists were asked to comment on what they understand rewilding to be and whether it is a term that could accurately describe the current emphasis in Scotland on enhancing the sense of wildness and restoring native woodland cover.

i. *Abandoning the land*

'Rewilding' is most commonly associated with abandoning land. It is non-interventionist and concerned with self-regulating ecosystems in vast wilderness areas such as those found in North America.

> *"...rewilding is where you just step back and let nature take over"*

ii. *Management themes associated with rewilding*

Panellists identified the following themes as being central to rewilding.

Rewilding theme	***Rationale***	***Supporting statements***
'Regaining wildness'	*Concerned with the existence value of 'nature for nature's sake'* *Concerned with the experiential and recreational value of 'wildness' to people,*	*"[…] the enhancement of wild land probably is rewilding […]"* *"[...] whether it requires reintroducing species, removing modern developments from that area or managing the land in a certain way, like grazing, it is about regaining wildness"*
Landscape scale approaches	*Recognising the scale on which natural processes operate within landscapes*	*"[…] making judgements at a landscape scale, accepting that the finer detail is being left to more natural processes"*
Precedence of natural processes	*Promoting autonomy within natural landscapes for 'self-willed land'*	*"[...] it's little intervention as possible and just let the natural processes take their course"*
Minimal intervention	*Reducing the degree of human intervention and adopting a 'nature knows best' approach*	*"[...] a move back away from intervention with the explicit objective of 'wise use' towards systems which are approaching some sort of, or what people would believe to be some sort of, self-regulating system"*
Extensive management	*Recognising that managing for iconic and charismatic species is 'gardening'*	*" […] we would like it to be extensive and self-sustaining and dynamic"*
Dynamicism in nature	*Recognising that nature is not static and that managing for particular species and habitats does not recognise the complexity of an evolving landscape*	*"[...] rewilding to me is positive, in the sense that that almost sort of dead end, prescriptive management….well it doesn't work"*
No fixed endpoints	*The land is self-willed and you have no expectation of how things will turn out.*	*"[...] but if it's wild land then we're not trying to steer too much how that land will actually regenerate"*

iii. Is Scotland rewilding?

In light of the emphasis on 'restoring wildness' among the estates involved in this process, panellists were asked to consider whether they would consider their own vision for their land as 'rewilding'. Very few respondents were comfortable with this term; in fact, most respondents stated that they would actively avoid it.

> *"I would never pin myself down to 'rewilding'"*

The NGO land owners were by far those most inclined to use this term, but even they were not necessarily employing it in any official capacity. Rewilding is evidently a hugely contentious term in Scotland. Discussions about it induced much negativity, animosity and nervousness. The key areas of contention for upland land managers in Scotland are as follows;

1.Ambiguous terminology and meaning

i. A meaningless term...

Many panellists believe rewilding to be a diffuse and meaningless term which means different things to different people. It lacks coherence and clarity. The lack of any real understanding as to what this term means, or more importantly what it might look like in Scotland's landscapes, was disconcerting for many panellists. Such ambiguity means that:

> *"....it is very difficult to know where the thrust is....for one person it means not letting any scruffy birch get in here, whereas to someone else it means you manage this land to the benefit of the land, not the owner"*

The use of different terms to refer to similar approaches and practices was evident throughout these discussions; terms such as landscape restoration, ecological restoration, enhancing wildness, wilding and rewilding were used interchangeably.

ii. A radical idea....

Furthermore, a couple of panellists asserted that the meaning of the term had been 'hijacked' by projects with very radical ambitions and negative media attention. For many, it is therefore associated with radical notions of reintroducing carnivores, a move that Scotland is widely thought not thought to be ready for socio-politically.

> *"...in terms of rewilding I think the big issue is, well of course, the whole 'wilderness' pejorative term, but I also think it is to do with the assumption that it is the American view to do with reintroducing large predators"*

Rewilding is therefore understood as an 'all or nothing' extremist approach.

"[Rewilding]...only means something to a few zealots"

iii. The rewilding stigma.....

The majority of panellists were in agreement that there is a huge amount of stigma attached to 'rewilding' as a term. However, it was evident that in general many respondents were actually in sympathy with the drivers behind rewilding; i.e. the emphasis on natural processes, the need for a landscape approach and extensive rather than intensive management. The anxiety associated with 'rewilding' as a term in Scotland is therefore associated with the fact that it has become synonymous with 'reintroducing species'. Many panellists expressed an interest in increasing the diversity of vegetation and overall resilience of Highland ecosystems which in its broadest context might be exactly what rewilding means. For this reason nearly all respondents echoed the fact that rewilding has a long way to go before it can be recovered from narrow definitions and therefore even begin to be accepted in Scotland;

"...we either need to come up with a new name which isn't tarnished or it's got to be reclaimed as a positive thing to do" (S8)

Comments.....
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2. Uniquely Scottish context: lack of relevance to the distinctive Scottish context

i. A distinct natural and cultural heritage.....

Several panellists referred to Scotland's distinct natural and cultural heritage. The Highlands have an extensive history of land use. Rewilding's North American origins makes it a problematic concept for many because it is associated with a more pristine wilderness than Scotland's cultural landscapes of wild character can offer.

ii. Rewilding wild land....

Two panellists pointed out that Scotland's wild land policy context recognises that 'wilderness' is an inappropriate term for the Scotland's managed landscapes of wild character and that the term 'wild land' is now used instead as it acknowledges this long cultural history. It was pointed out that applying the purist values of 'rewilding' to 'wild land' is misguided.

> *"It's a semi-natural woodland and that's the best that we will get. It's not some part of the Peruvian rainforest"*

iii. Sensitivities of 'emptying the Highland landscape'...

The sensitivities of any land management strategy which is concerned with 'wildness' were pointed out by nearly all panellists. 'Rewilding' in Scotland is accused of 'sterilising the land' and 're-enacting the Clearances'.

> *"Looking at the Highlands and Scotland as a whole there's still, very understandably, massive sensitivity about the fact that the Highlands is so depopulated...I mean the Clearances is still a big issue for the Highlands. It sounds crazy but it is"*

Comments.....
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3. <u>The conceptual soundness of rewilding/managing for wildness....</u>

i. Minimal intervention in a cultural landscape...

The minimal intervention approach associated with rewilding divided the panel. Some viewed a rewilding, or 'managing for wildness' approach in Scotland as being minimal

intervention while others believed it would be case of proactive intervention to actively restore the degraded and truncated condition. There was huge variation in views concerning the appropriate degree of intervention.

"...[muir burn] that's not a natural process, but sometimes a natural process isn't actually even as good"

ii. Looking backwards.....

Nearly all panellists were uncomfortable with the fact that rewilding is retrospective. They questioned the wisdom of a conservation approach which is guided by the unidentifiable baselines of a particular historical timeframe.

"[...] I don't like the rewilding....rewilding is always talking about behind...what happened in the past...now that could be back to last ice age are we talking about or when?"

Comments.....
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4. Conflicting conservation agendas

i. How managing for wildness fits with other conservation tools.....

The place of 'rewilding' within broader conservation strategies, such as the biodiversity agenda, needs to be understood. Several panellists were concerned that 'managing for wildness' – and its emphasis on minimal intervention and natural processes at a landscape scale – might not be compatible with the conservation policy framework of Natura 2000, for example, which is relates to specific species and habitats.

"I think we genuinely need to ask ourselves whether we're concentrating too much on these headline species to the detriment of many other wildness benefits which we could be gaining from the same land but by managing it in a slightly different way"

"I think designations, particularly European ones, hurt us. Go to ...[names a Scottish estate] where you've got regeneration of birch. There are those people in SNH who are turning round and saying because the dry heath community is being run over by trees we'll have to do something about it, but why?"

ii. The bureaucracy of conservation policy....

The majority of panellists believe the current conservation framework to be a major constraint when managing wild land. One panellist pointed out that if this emphasis on landscape scale natural processes is going to be meaningful then conservation must move beyond notions of 'favourable condition'. Many respondents detailed scenarios in which they have had to intervene in natural processes because prescriptive conservation policy requires prescriptive practices.

"I think the Natura legislation and the whole monitoring approach is schizophrenic in the sense that you monitor favourable condition – well if you believe that dynamicism is a key part of an ecosystem, if you've got a native woodland expanding is it not going to be expanding onto something? So one native woodland may be expanding onto dry heath which is a Natura habitat priority 1 – so that is now in unfavourable condition, so you can't keep all habitats in favourable condition in a dynamic landscape, it's just impossible"(S9)

iii. Conservation policy is too precious

It was also suggested that conservationists will have to be less idealistic if the future is one of greater autonomy in nature. Conservation policy will have to be able to accept that some charismatic species may be lost and that we may see a dip in biodiversity before it rises again in the move towards resilient ecosystems. A fundamental re-evaluation of conservation policy was called for on many occasions.

"...if the caper went tomorrow I think we've got to live with that. The habitat's not right for it here – it goes. Managing for species I think is not on"

Comments.....
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5. *Conflicting interests*

i. Living, working landscapes.....

Many panellists raised concerns that rewilding is a very uncompromising approach to conservation and that it is therefore incompatible with some strategic land use emphases that are critical for sustainable rural economies. As it is often interpreted as meaning the abandonment of land, rewilding often viewed as potentially stunting economic development and increasing sterilisation in a context in which land managers are already massively constrained by environmental limitations and unduly restrictive policy.

"[...] alarmed that this would be inhibited by an ideological view that wild land needs to be left alone, that people should be taken off it, left to nature and that species which were once there should be reintroduced and left to roam free"

ii. Conservation as allied with sustainability....

Some panellists expressed offence at the very notion of rewilding because it ignores the cultural value of centuries of management practices which has retained the landscape in this state of 'wildness'. A number of panellists called for greater recognition of the cultural value of these landscapes and for greater recognition of the fact that much of what is cherished as 'wild' in Scotland is actually the product of extensive management. Other panellists commented that conservation in Scotland has always been closely allied with sustainability rather than just the ecology of the landscape. They observed that authorities, such as the Cairngorms National Park, have a responsibility to consider the cultural value in these landscapes and to promote sustainable economic and social development. The need to consider the place of people in the future of these landscapes of wild character was supported by all.

"....we're a National Park because of the quality of the landscape and the biodiversity, and that is largely a consequence of management. Landowners can't be doing everything badly and we need to remember that"

iii. A vision of sustainability in Scotland.....

For many panellists, their vision for the future of their wild land is one of pragmatism, trade-off and multi-benefit conservation. For many, it is therefore about getting the most out of the land. It is about sustainable futures.

> *"...extremism at either end doesn't produce a realistic direction to go in"*

For this reason several reason several panellists believe that this link between 'wildness' and minimal intervention must be severed. In fact, a couple of panellists suggested that in Scotland where 'landscapes of wild character' are generally heavily managed to retain conservation benefits and socio-economic advantages, adopting a 'rewilding ethos' of minimal intervention could actually be hugely detrimental to the wild character of the Scottish landscape. The Highlands are a heavily altered, truncated ecosystem;

> *"...rewilding from my point of view is leaving nature to its own course. That's fine in some places, but that wouldn't work here"*

Viewing the restoration of wild landscapes pragmatically, as many land managers in the Highlands do, means that there is no reason why such restoration cannot be compatible with traditional land uses, such as providing sporting opportunities.

> *"I think most traditional land uses are compatible if they're done in a certain way"*

Comments.....
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Summary

'Wildness' is still a very controversial term in the Highlands. 'Rewilding' is therefore equally contentious. The significance of 'labelling' has therefore emerged as a strong theme from these scoping discussions. The vision for the majority of estates is very much concerned with 'reviving the land'. It is, therefore, not the ambition of restoring ecosystem health that people object to; when talking about rewilding in Scotland it appears to be the

fact that this ambition is founded upon 'wildness' which implies that it is incompatible with any extractive practices or productive land use of any kind. Scottish nature conservation has always been closely allied with sustainability. The panellists' visions for the future of Scotland's wild landscapes are therefore equally driven by their understanding of future sustainability of the uplands. The general vision for many therefore appears to be one of pragmatism; 'enhance and protect wildness', but not to the detriment of other traditional land uses. This is supported by the fact that a number of panellists felt the need to assert that actually their visions for the future were not necessarily visions for 'radical change' as is often associated with 'rewilding'. Current Scottish approaches to managing wild land might, therefore, not actually be that different to 'rewilding', but instead represent a similar ethos guided by pragmatism rather than radicalism.

Appendix IX: Round 2 Delphi Synthesis (distributed to panellists with cover letter)

University of St Andrews

Delphi Round 2 Synthesis: Feedback Document

What is this document?

The results of the Q-methodology exercise which was completed by all 17 estates comprising the panel for this research have now been analysed. This document presents a summary of these results in the form of a classification of approaches to the management of Scotland's wild land, with particular emphasis on the emergent practice of 'rewilding'.

The classification presented below is, of course, not exhaustive. Nor does it represent mutually exclusive positions. The vision for the future of Scotland's wild land on many estates will most likely be a blend of more than one of these wild land discourses. These different management profiles, as they will be called, are therefore not entirely incompatible with one another, but they do represent distinct approaches.

You are asked to review this classification and to consider whether your estate can identify with any of these profiles, and if so how. Dialogue boxes are provided to aid you with this.

This classification is based upon statistical analysis of the Q-sorts (the ranked matrix of statements) provided by each estate involved in this process. Should you wish to understand the details of this statistical procedure, or indeed should you wish for further detail on the results of this study, please do not hesitate to contact me.

Summarising the key points.....

Analysis of the Q-sorts reveals three distinct, statistically significant profiles for describing management approaches in Scotland's wild land. Profile 1 is essentially concerned with enhancing the 'wild quality' from the perspective of making the landscape feel wilder and in terms of allowing nature to be uncontrolled and autonomous. It therefore promotes natural processes and adopts a minimal intervention management position. Profile 2 takes a more active interventionist position where managing for biological diversity and specific species is important. Because profile 2 is most concerned with restoring and retaining a natural ecology, rather than 'wildness' specifically, it is more pragmatic about the interface between the natural and cultural heritage in wild land. Profile 3 seeks to preserve the integrity of the Highland landscape. The cultural heritage is imperative to wild land quality from this perspective and must not, therefore, be compromised in favour of the natural heritage.

i. *The classification: profile characters*

The overall character associated with each profile in this study is detailed below. When reviewing these, please consider the ways in which your estate might identify with each of them and provide comments in the dialogue box provided. While it is unlikely that any one profile will be fully representative of your approach, one is likely to resonate more widely than the other two. Please detail this in the dialogue box.

The Profiles

Profile 1: 'Wilderness enhancers' : restoring the land

Key terms: natural processes, intrinsic value of nature, experiential quality of wildness

The guiding view of wild land is as an area of land where nature's autonomy is dominant and where the ecology and landscape are as they would have been before the onset of human

influence, i.e. all native species present and little evidence of human presence. Concern for the intrinsic value of nature (nature for nature's sake, rather than human value) is central. The management approach for this profile is therefore concerned with promoting natural processes and ensuring human intervention is minimal. While pro-active restoration is considered, allowing nature to restore itself is the preferred option. It is understood that the degree of alteration to some ecosystems means that for natural processes to operate some components must be actively restored first; therefore this profile generally supports practices such as the reintroduction of lost species. This profile therefore expresses a strong concern for ecological functionability and connectivity. The significance of '*wildness*' to this profile is evident through its concern for maintaining and enhancing an unmodified landscape quality. For this reason, this profile might consider removing human artefacts which they view as compromising the wild character. With its concern for this primitive quality of wildness, the cultural heritage of the Highlands – and its associated traditional practices – are viewed as compromising their vision of wildness for the Highlands. While environmental sustainability is of concern, the socio-economic sustainability of these landscapes is somewhat out of focus.

Comments.....
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Profile 2: Semi-naturalness: restoring a natural ecology

Key terms: Restoration of native woodland, ecosystem resilience, sustainability

The guiding view of wild land is one of semi-natural habitats. The restoration of a natural ecology for the benefit of nature conservation is a driving management ethos, resulting in a strong concern for the restoration of native woodland. Directive intervention is most commonly employed to achieve this end. As concerned with 'future-naturalness' and adaptability of ecosystems in the face of climate change, notions of recreating past landscapes and managing the landscape retrospectively are unsupported. 'Wildness', as an experiential quality of landscape character is of far less significance. Consequently, enhancing the primitive condition of wildness through the removal of human artefacts is of little interest. While the environmental sustainability of the land is central, the absence of an emphasis on wildness allows for a more holistic understanding of sustainability, where people have a place in the future these landscapes. The cultural heritage, and traditional land uses, of the Highlands therefore neither detract from, or enhance, this vision for environmental sustainability.

Comments.....
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Profile 3: Sustainable land management: restoring the Highlands

Key terms: Cultural heritage, sustainability, natural regeneration

The guiding view of wild land is one of historical continuity and authenticity. Therefore, while there is a clear concern for healthy ecosystems and restoring a degraded ecology, it is important that the cultural and traditional heritage of these landscapes is not compromised in the process. Consequently, this concern for the authenticity of these landscapes means traditional practices should be celebrated in many instances. The cultural heritage is therefore more evenly weighted against the natural heritage in this profile. The future sustainability of such landscapes is evident through the importance of environmental education. However, there is an underlying appreciation of the quality of wildness that such landscapes exhibit, and recognition of the fact that management must be sensitive to this.

Comments.....
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In the table below, quotes from estates involved in this research which have management styles similar to the above profiles are provided to describe the overall nature of each profile.

Overarching viewpoints

Profile 1:

"[...] letting nature decide what to do. In most cases this will take us to a state that existed before man started overexploiting the natural capital"

Profile 2:

"...we should not seek to hold anything in stasis, or even attempt to recreate past situations [...] Instead we should look at the positive aspects of our landscapes now, and seek to strengthen and enhance them for maximum ecological and social benefit"

Profile 3:

"[...] caring for what we've got; appreciating and understanding through knowledge of the story of how it got to be what it is and recognising what is valuable in that....looking after that, but also looking forward and accepting the new and using the best of the old to build the best for the future"

Comments.....
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ii. Areas of divergence

The areas of disparity between each profile, upon which the above classification is founded, are detailed in the table below. This table indicates those management themes which are statistically more, and less, significant to each profile than to the other profiles.

	Profile 1	***Profile 2***	***Profile 3***
....of significantly more concern than in the other profiles	• *'The 'sense of wildness',* • *Ensuring predominance of natural processes,* • *The intrinsic value of nature,* • *The reintroduction of extirpated species,* • *The removal of human artefacts from the landscape,*	• *Integrated land uses,* • *Ensuring the land is productive (beyond ecological productivity)*	• *Protecting the cultural heritage of the landscape,* • *The 'authenticity' of the landscape,* • *Historical accuracy of the landscape character,*
....of significantly less concern than in the other profiles	• *Ensuring 'a sustainable future',* • *Ensuring the land is productive,* • *Providing sporting opportunities,*	• *Ensuring that visual intrusions are minimal,* • *Removing human artefacts from the landscape,* • *The 'authenticity' of the landscape,*	• *Ensuring adaptability of ecosystems in the face of climate change,* • *Restoration of native woodland through planting,*

iii. *Degree of consensus*

The results of this study do not show absolute disparity in approaches. While there is little strategic direction in the management of Scotland's landscapes of wild character, there are some areas of considerable consensus. For instance, improving the ecology of wild land is widely supported, particularly through increasing woodland cover through natural regeneration which is an aspiration associated with all three profiles. Despite this 'restoration' emphasis, there is agreement that 'reviving the land' in this way should not be too retrospective in terms of recreating past landscapes. Therefore, all three profiles are in agreement that palaeoecological indicators should not be too central in guiding today's management. While the degree of pragmatism in managing wild land varies, there is general agreement that eradicating non-native species is fighting a losing battle in many instances, and that more creative strategies for restoration are necessary. While there is disagreement over the significance of landscape character, there is consensus that enhancing a picturesque quality is of little concern. Equally, the place of people in terms of extractive activities and recreation is a source of disagreement, but the need to encourage more pro-environmental behaviour through environmental education is consistently ranked towards the middle of the Q sorts, suggesting it is of some concern but not as significant as the actual land management practices themselves.

Areas of statistical consensus	***Profile 1***	***Profile 2***	***Profile 2***
Restoration of native woodland through natural regeneration	*+2 (1.40)*	*+3 (1.50)*	*+3 (1.70)*
Retaining or enhancing biodiversity	*+3 (1.43)*	*+2 (1.18)*	*+2 (1.50)*
Eradicating non-native species	*0 (0.32)*	*0 (0.18)*	*0 (0.21)*
Using palaeological indicators such as pollen profiles in future management	*-1 (-0.72)*	*-2 (-0.87)*	*-1 (0.41)*
Promoting a picturesque quality in the landscape	*-1 (0.90)*	*0 (-0.17)*	*-1 (-0.54)*
Managing for ecosystem services	*0 (-0.03)*	*0 (0.33)*	*0 (-0.07)*
Promoting ecotourism and encouraging visitors	*-2 (-0.91)*	*-1 (-0.57)*	*-1 (-0.82)*
Environmental education	*0 (0.21)*	*0 (0.34)*	*+1 (0.61)*
Promoting people to foster more pro-environmental behaviour	*+1 (0.66)*	*0 (-0.06)*	*0 (0.27)*
Managing for 'nativeness'	*0 (0.00)*	*+1 (0.72)*	*+1 (0.54)*

Comments.....
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Appendix X: Un-rotated factor matrix

The un-rotated factor matrix shows the results of the factor extraction by illustrating the degree of correlation between each Q-sort and each extracted factor. High loadings on the same factors signifies commonality in vision for the future of Scotland's wildland. The eigenvalues represent the sum the square loadings of all the Q-sorts on each factor. They therefore demonstrate the significance of each factor in explaining the overall variance. Unsuprisingly, the first factor extracted accounts for the greatest amount of common variance and the degree of variance attributable to each factor decreases as the overall proportion of variance is explained. The communality explains the percentage of the variance in each Q sort which is attributable to common variance and is reached by summing the square loadings of each factor for each sort. High commonality therefore indicates a Q sort which is representative of the whole study. Low commonality implies an atypical Q-sort. To understand the true significance of these factor loadings they must be squared to reveal the overall percentage of the variance for each Q-sort that is attributable to each factor.

	Q sorts	***Factor 1***	***Factor 2***	***Factor 3***	***Communality (h2) (%)***
1.	*CO3*	0.76 (58%)	-0.27 (7%)	-0.02 (4%)	*69%*
2.	*P2*	-0.17 (3%)	0.36 (13%)	0.26 (7%)	*20%*
3.	*T2*	0.58 (34%)	0.37 (14%)	0.20 (4%)	*51%*
4.	*CO1*	0.52 (27%)	-0.45 (20%)	0.21 (4%)	*51%*
5.	*P7*	0.45 (20%)	0.42 (18%)	0.38 (14%)	*52%*
6.	*CO4*	0.28 (8%)	-0.02 (0.04%)	-0.63 (40%)	*48%*
7.	*CO5*	0.72 (52%)	-0.38 (14%)	-0.00 (0%)	*66%*
8.	*T3*	0.17 (3%)	0.56 (31%)	-0.23 (5%)	*39%*
9.	*P6*	0.64 (41%)	0.24 (5%)	0.14 (2%)	*48%*
10.	*T1*	0.49 (24%)	-0.48 (23%)	0.14 (2%)	*49%*
11.	*P1*	0.65 (42%)	0.01 (0.01%)	-0.28 (8%)	*50%*
12.	*CO7*	0.70 (49%)	-0.29 (8%)	0.45 (20%)	*77%*
13.	*CO6*	0.50 (25%)	0.25 (6%)	0.20 (4%)	*35%*
14.	*CO2*	0.53 (28%)	-0.57 (32%)	0.07 (5%)	*68%*
15.	*P3*	0.39 (15%)	0.34 (12%)	-0.42 (18%)	*45%*
16.	*P5*	0.01 (0.01%)	0.76 (58%)	0.14 (2%)	*60%*
17.	*P4*	0.59 (35%)	-0.10 (1 %)	0.16 (3%)	*39%*
	Eigenvalue	*4.6458*	*2.6340*	*1.3187*	
	Variance (%)	*27*	*15*	*8*	

Appendix XI: Extracting the appropriate number of factors

Because factor analysis generates an infinite number of 'acceptable solutions', reaching an effective solution requires the researcher to make a number of decisions about the requirement of their aims, objectives and dataset. Clarity over an analytic strategy for Q-methodology is, therefore, imperative in decisions like how many factors to extract. For instance, in this study, whether the analytic strategy was to hear as many viewpoints as possible or to establish discourses associated with a number of particular – perhaps anticipated – viewpoints would influence the number of factors extracted. Although the first Delphi round revealed some critical perspectives on wildland management, this Q-study remained faithful to induction by being guided by the data as opposed to seeking pre-considered discourses. However, because the logic of abduction is critical to Q-methodology, this part of the adapted wildland Delphi model moves beyond induction in that, rather than seeking to simply 'describe' observed patterns, it seeks to 'explain' these observations too. As is common in Q-methodology, this abductive approach does not view "observations for themselves, but as a sign of other things" (Shank, 1998: 852 in Watts & Stenner, 2012: 39). In this sense, the power of Q-methodology is greatest when the logic of exploration and discovery is applied (Watts & Stenner, 2012: 96). Accordingly, a number of different solutions were trialled using the exploratory technique of centroid factor analysis and varimax rotation.

Watts & Stenner's (2012) rule of extracting one factor for every six sorts was used as a starting point for factor extraction in this study. This resulted in an initial extraction of three factors. Although subsequently the three factor solution was deemed to be most suitable in this instance, a number of exploratory analyses, extracting different numbers of factors, were also performed. The fundamental justification for proceeding with a three factor solution was the fact that it explained a significant amount of the study variance through a reasonable number of factors; a total combined variance of anything above 35-40% is considered sound (Watts & Stenner, 2012; Stenner, 2012, *personal communication*). The rules of thumb applied to understand a 'good solution' were:

- Maximises the number of sorts which load significantly on a factor by minimising the number of confounded or non-significant sorts
- Each factor in the solution has a minimum of three sorts loading on it
- In accordance with the Kaiser-Guttman criterion only factors with eigenvalues of 1.00 or above were extracted as this kind of value suggests that the factor in question contributes significantly to the total variance in the correlation matrix

A scree test was performed to further validate this three factor solution. This involved running an initial PCA extraction and plotting the eigenvalue results from this onto a line graph to explore the change in slope. A significant factor loading figure was

calculated and applied and a minimum of three significantly loading sorts on each factor criterion was applied. The result of this supported the three factor solution.

Ultimately, these criteria are simply a guide and statistical significance in Q-methodology is not always completely representative of theoretical significance; establishing the appropriate number of factors for any Q-study must therefore involve trialling a number of solutions.

Appendix XII: Creating a factor estimate

A factor estimate is a weighted average of all Q sorts which load significantly on that factor. It therefore provides insight into the viewpoint associated with each factor. Having established which sorts to use in the calculation of each factor estimate, the relevant factor weights for all the Q sorts to be included must be calculated. This three step process is detailed below.

Step 1: *Calculate the initial factor weight for each sort:*

Initial factor weight for each Q-sort on each factor =
factor loading ÷ (1 – factor loading^2)

i.e. Worked example: Calculating the first Q-sort's (CO3) loading on factor 1:

CO3:
= 0.70 ÷ (1 – 0.70^2)
= 0.70 ÷ (1 – 0.51)
= 0.70 ÷ 0.49
= 1.43 (2dp)

Results:

Factor 1	*Factor 2*	*Factor 3*
CO3: 1.37	*T2: 1.26*	*CO4: 1.22*
CO1: 1.43	*P7: 1.43*	*P1: 0.74*
CO5: 1.80	*P6: 0.94*	*P3: 0.97*
T1: 1.37	*CO6: 0.82*	
CO7: 1.71		
CO2: 1.99		
P4: 0.64		

Step 2: *Calculate the reciprocal of the largest factor weight for each factor*

Calculate the reciprocal of the largest factor weight from step 1 for each factor:
1 ÷ initial factor weight of largest factor weight

Results:

Factor 1 (CO2)	*Factor 2 (P7)*	*Factor 3 (CO4)*
1 ÷ 1.99 = 0.50	*1 ÷ 1.43 =0.70*	*1 ÷ 1.22 = 0.82*

Step 3: *Calculate the final factor weight*

Calculate the final factor weight:
Initial factor weight from step 1 for each sort × the reciprocal from step 2

Results:

Factor 1	*Factor 2*	*Factor 3*
CO3: 0.66	*T2: 0.88*	*CO4:* ***1.0***
CO1: 0.72	*P7:* ***1.0***	*P1: 0.61*
CO5: 0.9	*P6: 0.66*	*P3: 0.79*
T1: 0.66	*CO6: 0.57*	
CO7: 0.86		
CO2: ***1.0***		
P4: 0.32		

These final weightings describe the percentage contribution of each sort to each factor relative to the highest loading factor when that represents 100%, i.e. P4 contributes only 32% as much to the factor 1 estimate as CO2 does.

Step 4: *Create the final estimate*

Each Q sort's weighting must now be applied to its own item rankings to establish the final factor estimate. To do so, the ranking of each item for each Q-sort must be represented on a 1 to 7 scale of distribution, as opposed to the -3 to +3 scale. Therefore, while item 1 on Q sort 1 (CO3) was ranked -1, for the purposes of these calculations it becomes a 3 to provide a new weighted score. Each new ranking score has then been multiplied by the factor weight of the associated Q sort to provide a new set of weighted

scores, meaning that the relative contribution of each Q-sort to the final estimate has been weighted on the basis of their respective factors loadings (Watts & Stenner, 2012);

e.g. *Item 1 in CO3's sort has a new ranking score of 3*
The CO3 sort has an associated factor weighting of 0.66

3 × 0.66 = a new, weighted score for item 1, Q-sort 1 of 1.98

The higher the total weighted score is for given item on a factor, the more positively that item has been valued by that factor.

Appendix XIII: Example crib sheet

Watts & Stenner's (2012) 'crib sheet approach' ensures holistic interpretation of Q-data. This approach begins with the creation of a basic crib sheet for each factor which asks four fundamental questions; i) what are the two highest ranking statements for the factor in question, ii) what are the two lowest ranking statements for that factor, iii) which statements are ranked higher in this factor array than in any other factor, and iv) which statements are ranked lower in this factor array than in any other factor array. While the results of crib sheets may not represent statistically different ranking, it provides a good starting point for interpretation and discussion. The crib sheet for factor 1 is provided below as an example.

Factor 1 Crib Sheet
Items ranked + 3 4. Promoting natural processes, 5. Retaining or enhancing biodiversity
Items ranked higher in factor array 1 than in other factor arrays 1. Reintroduction of extirpated species (+1) 6. Eradicating non-native species (0) shared[2] 7. Establishing ecological connectivity with surrounding land (+2) shared 8. Using palaeological indicators such as pollen profiles in future management (-1) shared 9. Ensuring ecosystems are adaptable in the face of climate change (+1) shared 11. Enhancing wildness from an experiential perspective (+2) 12. Removing human artefacts (0)

[2]Watts & Stenner (2012) explain that including these tied items is a matter of personal preference, but they advocate inclusion through their experience.

13. Ensuring visual intrusions are minimal (+1) shared
15. Providing a sense of adventure for recreationalists (-1)
21. Managing for ecosystem services (0) shared
27. Promoting people to foster more pro-environmental behaviour (+1)
28. Enhancing the quality of naturalness (+1) shared
32. The intrinsic value of nature (+2)

Items ranked lower in factor array 1 than in other factor arrays

2. Restoration of native woodland through natural regeneration (+2)
6. Eradicating non-native species (0) shared
10. Maintaining high profile species in favourable condition (0)
14. Promoting a picturesque quality in the landscape (-1) shared
16. Providing a and managing infrastructure for visitor management, i.e. paths (-1) shared
17. Supporting traditional land management practices (-2)
19. Protecting cultural heritage of the landscape (-1) shared
21. Managing for ecosystem services (0) shared
22. Employing pragmatism in management (-1)
23. Promoting ecotourism and encouraging visitors (-2)
24. Integrated land uses (-2) shared
25. A sustainable future (0)
26. Environmental education (0) shared
31. Managing for nativeness (0)

Items ranked -3

18. Providing sporting opportunities, i.e. stalking, grouse shooting,
20. Ensuring the land is productive

Appendix XIV: Calculations for ternary plot

Because, in the form that they are presented throughout Chapter 6, the factor loadings represent 3-dimensional data, to plot them onto a ternary plot the factor loadings for the three factors need to sum to a constant. This is important because 3-dimensional data cannot be plotted onto a flat 2-dimensional surface.

To ensure the three factor loadings for each estate summed to a constant the following steps were taken:

i) *The factor loadings were squared:* Importantly, though, these squared loadings, would still not sum to 1 because a number of factors were discarded when it was decided that only 3 factors would be extracted. Therefore;

ii) *The squared factor loadings were converted into proportion of retained variance:* This required dividing each squared loading by the sum of the three squared loadings for the estates.

Appendix XV: Panellist's reactions to the research process

Panellists were asked to consider how they found the research process of the adapted Delphi. Below are some selected quotes which show the general nature of their responses.

"It's been difficult at times because, in truth, you've asked us to think about things that I don't think we would normally be thinking about" (P6)

"It's nice to think at that level sometimes, it refocuses your thoughts" (CO2)

"It's good to see what other land owners think is going on at the moment and where they're at with things" (CO4)

"I found the exercise quite revealing in terms of the compromises that are faced by land managers and the contradictions that exist within organisations which are often driven by what can be funded e.g. you may support removal of human infrastructure but end up building a car park and putting in paths because it is part of a funded project" (CO7)